

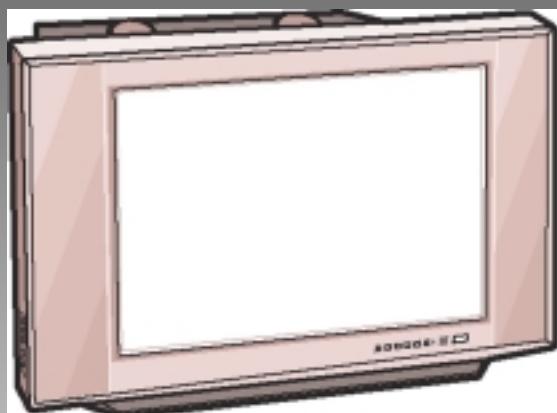
SAMSUNG

COLOR TELEVISION RECEIVER

Chassis : KS3A (REV. 1)
Model: CS29A5WT8X/XSG
CS29A6WT8X/BWT

SERVICE Manual

COLOR TELEVISION RECEIVER



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1. Precautions

Follow these safety, servicing and ESD precautions to prevent damage and protect against potential hazards such as electrical shock and X-rays.

1-1 Safety Precautions

1. Be sure that all of the built-in protective devices are replaced. Restore any missing protective shields.
2. When reinstalling the chassis and its assemblies, be sure to restore all protective devices, including: nonmetallic control knobs and compartment covers.
3. Make sure that there are no cabinet openings through which people—particularly children—might insert fingers and contact dangerous voltages. Such openings include the spacing between the picture tube and the cabinet mask, excessively wide cabinet ventilation slots, and improperly fitted back covers.

If the measured resistance is less than 1.0 megohm or greater than 5.2 megohms, an abnormality exists that must be corrected before the unit is returned to the customer.

4. Leakage Current Hot Check (Figure 1-1): Warning: Do not use an isolation transformer during this test. Use a leakage-current tester or a metering system that complies with American National Standards Institute (ANIS C101.1, Leakage Current for Appliances), and Underwriters Laboratories (UL Publication UL1410, 59.7).
5. With the unit completely reassembled, plug the AC line cord directly into the power outlet. With the unit's AC switch first in the ON position and then OFF, measure the current between a known earth ground (metal water pipe, conduit, etc.) and all exposed metal parts, including: antennas, handle brackets, metal cabinets, screwheads and control shafts. The current measured should not exceed 0.5 milliamp. Reverse the power-plug prongs in the AC outlet and repeat the test.

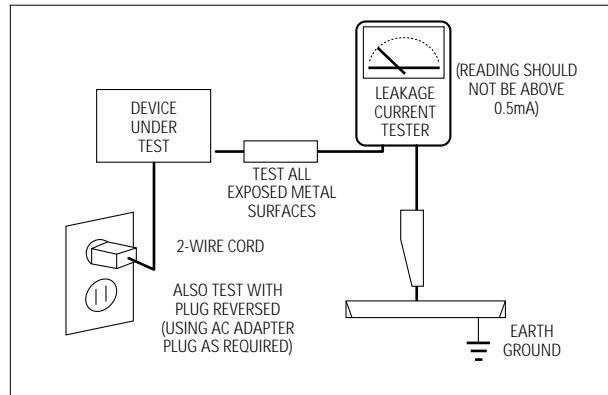


Fig. 1-1 AC Leakage Test

6. Antenna Cold Check: With the unit's AC plug disconnected from the AC source, connect an electrical jumper across the two AC prongs. Connect one lead of the ohmmeter to an AC prong. Connect the other lead to the coaxial connector.
7. X-ray Limits: The picture tube is especially designed to prohibit X-ray emissions. To ensure continued X-ray protection, replace the picture tube only with one that is the same type as the original. Carefully reinstall the picture tube shields and mounting hardware; these also provide X-ray protection.
8. High Voltage Limits: High voltage must be measured each time servicing is done on the B+, horizontal deflection or high voltage circuits. Correct operation of the X-ray protection circuits must be reconfirmed whenever they are serviced. (X-ray protection circuits also may be called "horizontal disable" or "hold-down".)

Heed the high voltage limits. These include the X-ray Protection Specifications Label, and the Product Safety and X-ray Warning Note on the service data schematic.

1-1 Safety Precautions (Continued)

9. High voltage is maintained within specified limits by close-tolerance, safety-related components and adjustments. If the high voltage exceeds the specified limits, check each of the special components.
 10. Design Alteration Warning:
Never alter or add to the mechanical or electrical design of this unit. Example: Do not add auxiliary audio or video connectors. Such alterations might create a safety hazard. Also, any design changes or additions will void the manufacturer's warranty.
 11. Hot Chassis Warning:
Some TV receiver chassis are electrically connected directly to one conductor of the AC power cord. If an isolation transformer is not used, these units may be safely serviced only if the AC power plug is inserted so that the chassis is connected to the ground side of the AC source.

To confirm that the AC power plug is inserted correctly, do the following: Using an AC voltmeter, measure the voltage between the chassis and a known earth ground. If the reading is greater than 1.0V, remove the AC power plug, reverse its polarity and reinsert. Re-measure the voltage between the chassis and ground.
 12. Some TV chassis are designed to operate with 85 volts AC between chassis and ground, regardless of the AC plug polarity. These units can be safely serviced only if an isolation transformer inserted between the receiver and the power source.
 13. Some TV chassis have a secondary ground system in addition to the main chassis ground. This secondary ground system is not isolated from the AC power line. The two ground systems are electrically separated by insulating material that must not be defeated or altered.
 14. Components, parts and wiring that appear to have overheated or that are otherwise damaged should be replaced with parts that meet the original specifications. Always determine the cause of damage or overheating, and correct any potential hazards.
 15. Observe the original lead dress, especially near the following areas: Antenna wiring, sharp edges, and especially the AC and high voltage power supplies. Always inspect for pinched, out-of-place, or frayed wiring. Do not change the spacing between components and the printed circuit board. Check the AC power cord for damage. Make sure that leads and components do not touch thermally hot parts.
 16. Picture Tube Implosion Warning:
The picture tube in this receiver employs "integral implosion" protection. To ensure continued implosion protection, make sure that the replacement picture tube is the same as the original.
 17. Do not remove, install or handle the picture tube without first putting on shatterproof goggles equipped with side shields. Never handle the picture tube by its neck. Some "in-line" picture tubes are equipped with a permanently attached deflection yoke; do not try to remove such "permanently attached" yokes from the picture tube.
 18. Product Safety Notice:
Some electrical and mechanical parts have special safety-related characteristics which might not be obvious from visual inspection. These safety features and the protection they give might be lost if the replacement component differs from the original—even if the replacement is rated for higher voltage, wattage, etc.
- Components that are critical for safety are indicated in the circuit diagram by shading, () or (). Use replacement components that have the same ratings, especially for flame resistance and dielectric strength specifications. A replacement part that does not have the same safety characteristics as the original might create shock, fire or other hazards.

1-2 Servicing Precautions

Warning1: First read the "Safety Precautions" section of this manual. If some unforeseen circumstance creates a conflict between the servicing and safety precautions, always follow the safety precautions.

Warning2: An electrolytic capacitor installed with the wrong polarity might explode.

1. Servicing precautions are printed on the cabinet. Follow them.
2. Always unplug the unit's AC power cord from the AC power source before attempting to:
(a) Remove or reinstall any component or assembly, (b) Disconnect an electrical plug or connector, (c) Connect a test component in parallel with an electrolytic capacitor.
3. Some components are raised above the printed circuit board for safety. An insulation tube or tape is sometimes used. The internal wiring is sometimes clamped to prevent contact with thermally hot components. Reinstall all such elements to their original position.
4. After servicing, always check that the screws, components and wiring have been correctly reinstalled. Make sure that the portion around the serviced part has not been damaged.
5. Check the insulation between the blades of the AC plug and accessible conductive parts (examples: metal panels, input terminals and earphone jacks).
6. Insulation Checking Procedure: Disconnect the power cord from the AC source and turn the power switch ON. Connect an insulation resistance meter (500V) to the blades of the AC plug.

The insulation resistance between each blade of the AC plug and accessible conductive parts (see above) should be greater than 1 megohm.
7. Never defeat any of the B+ voltage interlocks. Do not apply AC power to the unit (or any of its assemblies) unless all solid-state heat sinks are correctly installed.
8. Always connect a test instrument's ground lead to the instrument chassis ground before connecting the positive lead; always remove the instrument's ground lead last.

1-3 Precautions for Electrostatically Sensitive Devices (ESDs)

1. Some semiconductor (“solid state”) devices are easily damaged by static electricity. Such components are called Electrostatically Sensitive Devices (ESDs); examples include integrated circuits and some field-effect transistors. The following techniques will reduce the occurrence of component damage caused by static electricity.
2. Immediately before handling any semiconductor components or assemblies, drain the electrostatic charge from your body by touching a known earth ground. Alternatively, wear a discharging wrist-strap device. (Be sure to remove it prior to applying power—this is an electric shock precaution.)
3. After removing an ESD-equipped assembly, place it on a conductive surface such as aluminum foil to prevent accumulation of electrostatic charge.
4. Do not use freon-propelled chemicals. These can generate electrical charges that damage ESDs.
5. Use only a grounded-tip soldering iron when soldering or unsoldering ESDs.
6. Use only an anti-static solder removal device. Many solder removal devices are not rated as “anti-static”; these can accumulate sufficient electrical charge to damage ESDs.
7. Do not remove a replacement ESD from its protective package until you are ready to install it. Most replacement ESDs are packaged with leads that are electrically shorted together by conductive foam, aluminum foil or other conductive materials.
8. Immediately before removing the protective material from the leads of a replacement ESD, touch the protective material to the chassis or circuit assembly into which the device will be installed.
9. Minimize body motions when handling unpackaged replacement ESDs. Motions such as brushing clothes together, or lifting a foot from a carpeted floor can generate enough static electricity to damage an ESD.

2. Reference Information

2-1 Tables of Abbreviations and Acronyms

Table 2-1 Abbreviations			
A	Ampere	MV	Megavolt
Ah	Ampere-hour	MW	Megawatt
Å	Angstrom	MΩ	Megohm
dB	Decibel	m	Meter
dBm	Decibel Referenced to One Milliwatt	μA	Microampere
°C	Degree Celsius	μF	Microfarad
°F	Degree Fahrenheit	μH	Microhenry
°K	degree Kelvin	μm	Micrometer
F	Farad	μs	Microsecond
G	Gauss	μW	Microwatt
GHz	Gigahertz	mA	Milliampere
g	Gram	mg	Milligram
H	Henry	mH	Millihenry
Hz	Hertz	ml	Milliliter
h	Hour	mm	Millimeter
ips	Inches Per Second	ms	Millisecond
kWh	Kilowatt-hour	mV	Millivolt
kg	Kilogram	nF	Nanofarad
kHz	Kilohertz	Ω	Ohm
kΩ	Kilohm	pF	Picofarad
km	Kilometer	lb	Pound
km/h	Kilometer Per Hour	rpm	Revolutions Per Minute
kV	Kilovolt	rps	Revolutions Per Second
kVA	Kilovolt-ampere	s	Second (Time)
kW	Kilowatt	V	Volt
l	Liter	VA	Volt-ampere
MHz	Megahertz	W	Watt
		Wh	Watt-hour

Table 2-2 Table of Acronyms

ABL	Automatic Brightness Limiter	I/O	Input/output
AC	Alternating Current	L	Left
ACC	Automatic Chroma Control	L	Low
AF	Audio Frequency	LED	Light Emitting Diode
AFC	Automatic Frequency Control	LF	Low Frequency
AFT	Automatic Fine Tuning	MOSFET	Metal-Oxide-Semiconductor-Field-Effect-Tr
AGC	Automatic Gain Control	MTS	Multi-channel Television Sound
AM	Amplitude Modulation	NAB	National Association of Broadcasters
ANSI	American National Standards Institute	NEC	National Electric Code
APC	Automatic Phase Control	NTSC	National Television Systems Committee
APC	Automatic Picture Control	OSD	On Screen Display
A/V	Audio-Video	PCB	Printed Circuit Board
AVC	Automatic Volume Control	PLL	Phase-Locked Loop
BAL	Balance	PWM	Pulse Width Modulation
BPF	Bandpass Filter	QIF	Quadrature Intermediate Frequency
B-Y	Blue-Y	R	Right
CATV	Community Antenna Television (Cable TV)	RC	Resistor & Capacitor
CB	Citizens Band	RF	Radio Frequency
CCD	Charge Coupled Device	R-Y	Red-Y
CCTV	Closed Circuit Television	SAP	Second Audio Program
Ch	Channel	SAW	Surface Acoustic Wave(Filter)
CRT	Cathode Ray Tube	SIF	Sound Intermediate Frequency
CW	Continuous Wave	SMPS	Switching Mode Power Supply
DC	Direct Current	S/N	Signal/Noise
DVM	Digital Volt Meter	SW	Switch
EIA	Electronics Industries Association	TP	Test Point
ESD	Electrostatic Discharge	TTL	Transistor Transistor Logic
ESD	Electrostatically Sensitive Device	TV	Television
FBP	Feedback Pulse	UHF	Ultra High Frequency
FBT	Flyback Transformer	UL	Underwriters Laboratories
FF	Flip-Flop	UV	Ultraviolet
FM	Frequency Modulation	VCD	Variable-Capacitance Diode
FS	Fail Safe	VCO	Voltage Controlled Oscillator
GND	Ground	VCXO	Voltage Controlled Crystal Oscillator
G-Y	Green-Y	VHF	Very High Frequency
H	High	VIF	Video Intermediate Frequency
HF	High-Frequency	VR	Variable Resistor
HI-FI	High Fidelity	VTR	Video Tape Recorder
IC	Inductance-Capacitance	VTVM	Vacuum Tube Voltmeter
IC	Integrated Circuit	TR	Transistor
IF	Intermediate Frequency		

2-2 IC Line Up

Table 2 - 3 IC Line - Up

NO	BOARD	LOC. NO	SPEC	DESCRIPTION	REMARK	
1	MAIN	IC201S	VDP3112B	Video Processor	Refer to Table 2-3-1	
		IC601	MSP3411G	Multistandard Sound Processor	Refer to Table 2-3-2	
		IC901	SDA555X	MICOM, TTX(MTP)		
		IC902	KS24L161	EEPROM		
		IC602	TDA7297	Audio AMP	Refer to Table 2-3-3	
		HIC201	DRGB001	RGB Drive AMP Hybrid IC	VM Option	
		HIC202				
		HIC203				
		HIC204				
		HIC401	DDRI001	100Hz Horizontal Pulse AMP	Option	
		IC301	LA7845	Vertical IC		
		Q402	KSC2073-H2	Horizontal Drive IC		
		Q401	KSD5703		HC401	
		D414	FMP-3FU			
		IC401	KA393	E/W Drive IC		
		Q404	IRF620			
		IC801S	3S1265R	SPS Controller		
		D801S	RBV606	Bridge Diode		
		PC801S	PC123Y	Photo Coupler		
		IC802	KA78R05	5V Controlled Regulator	HC801	
		D805	FML-G12S	Rectifier Diode		
		D806				
		D807				
		D802	FMG-G2CS			
		IC201	KA78RM33	3.3V Regulator	VDPY	
		IC804	KA7806	6V Regulator		
		IC803	KA78R08	8V Controlled Regulator		
		IC903	KA78RM33	3.3V Regulator		
		IC904	KIA7025AP	MICOM Reset IC		
		Q909	2N7000	IIC Level Shifter		
		Q910				
		TU01S	TCLS3101PD09A9(S)	Main Tuner with IF Block	Refer to Table 2-3-4	
		TU02S	TCPN3081PD09A(S)	Sub Tuner with IF Block	Refer to Table 2-3-5	

Table 2 - 3 IC Line - Up

NO	BOARD	LOC. NO	SPEC	DESCRIPTION	REMARK	
2	CRT	IC501	TDA6111Q	Video Output AMP R.G.B Drive		
		IC502				
		IC503				
		QF04	2SC2344	Push-Pull (VM)	Option	
		QF05	2SA1011			
		QG02	KSA940	TR-Power (TILT)		
		QG03	KSD2073-H2			
		ICG01	KA4558	OP-AMP (TILT)		
3	DOUBLE FOCUS	ICH01	KA4558	OP-AMP	Option	
		QH01	2SC4636RB	TR-Power		
4	V-S/W	ICS01	TEA6425	Video Switching IC with Adder Output	Option	
5	PIP	ICP01	SDA9489X	High-end Picture-In Picture IC	Option	
		ICP02	EZ1086CM	3.3V Regulator		

Table 2-3-1 VIDEO IC (IC201S)

SPEC	FUNCTION	REMARK
VDP3108B	50Hz Basic	
VDP3112B	50Hz, 2H Comb Filtr	
VDP3120B	50Hz, 2H Comb Filter, Horizontal Scaler	
VDP3132Y	50Hz, 2H Comb Filter, DVD Input	
VDP3140D	100Hz	

Table 2-3-2 SOUND IC (IC601)

SPEC	FUNCTION	REMARK
MSP3400D	Multistandard, A2 Stereo	
MSP3410D	Multistandard, A2 Stereo, Nicam	
MSP3411G	Multistandard, A2 Stereo, Nicam, Virtual Dolby	

Table 2-3-3 SOUND AMP (IC602)

SPEC	FUNCTION	REMARK
TDA7297	15W x 2CH, 10W x 2CH	

Table 2-3-4 1'st TUNER (TU01S)

SPEC	FUNCTION	REMARK
TCLS3101PD09A(S)	CS with LNA Function	Main
TCPS3001PD09D(S)	CS	
TCPS3001PD09E(S)	CS	India

Note TCPS3001PD09A(S) is out-of-date, TCPS3001PD09D(S) which is up-to-date has the same function.

Table 2-3-5 2'nd TUNER (TU02S)

SPEC	FUNCTION	REMARK
TCPS3000PC09B(S)	CS	Sub

MEMO

3. Specifications

Television System	CS	PAL/SECAM-B/G,D/K,L,I, NTSC-M	
Antena Input		75ohms, Coaxial Cable	
Power	Consumption	100W (Applied When 29" Flat)	
	Requirements	220V Only	
		Free Voltage	Not Present R815
Sound	Frequency	50/60Hz	
	Output	15W x 2CH	
		10W x 2CH	
		5W x 2CH	
	Effect	Vitual Dolby	Option
		Turbo Sound	
		Pseudo Stereo	
Jacks	Front (AV2)	RCA Input	
		S-VHS	Option
		Head-Phone	
	Back	2Scart Input/Output	AV1 : Scart I/O, RGB Input, RF Out AV2 : Scart I/O, Monitor Out
		DVD Input(YPbPr)	Option
		AV2 Monitor Audio Output	Option
		S-VHS	Option

Specifications are subject to change.



Specifications for Model Name (Ex. CS29A6??8X/HAC)

	Function	NOTE
N	NICAM	"NICAM" means that A2 STEREO + NICAM
P	2 TUNER PIP	
PF	2 TUNER PIP, NICAM, TTX	
PT	2 TUNER PIP, A2 STEREO, TTX	
PW	2 TUNER PIP, A2 STEREO	
MT	2 TUNER MULTI PIP, A2 STEREO,	
NT	NICAM, TTX	
WT	A2 STEREO, TTX	
GW	1 TUNER PIP, A2 STEREO, TTX	

MEMO

4. Alignment and Adjustments

4-1 General Alignment Instructions

1. Usually, a color TV-VCR needs only slight touch-up adjustment upon installation. Check the basic characteristics such as height, horizontal and vertical sync and focus.
2. Observe the picture for good black and white details. There should be objectionable color shading; if color shading is present, demagnetize, perform purity and convergence adjustments described below.
3. Use the specified test equipment or its equivalent.
4. Correct impedance matching is essential.
5. Avoid overload. Excessive signal from a sweep generator might overload the front-end of the TV. When inserting signal markers, do not allow the marker generator to distort test results.
6. Connect the TV only to an AC power source with voltage and frequency as specified on the backcover nameplate.
7. Do not attempt to connect or disconnect any wires while the TV is turned on. Make sure that the power cord is disconnected before replacing any parts.
8. To protect against shock hazard, use an isolation transformer.

4-2 Automatic Degaussing

A degaussing coil is mounted around the picture tube, so that external degaussing after moving the TV should be unnecessary. But the receiver must be properly degaussed upon installation.

The degaussing coil operates for about 1 second after the power is switched ON. If the set is moved or turned in a different direction, the power should be OFF for at least 10 minutes.

If the chassis or parts of the cabinet become magnetized, poor color purity will result. If this happens, use an external degaussing coil. Slowly move the degaussing coil around the faceplate of the picture tube and the sides and front of the receiver. Slowly withdraw the coil to a distance of about 6 feet before turning power OFF.

If color shading persists, perform the following Color purity and Convergence adjustments.

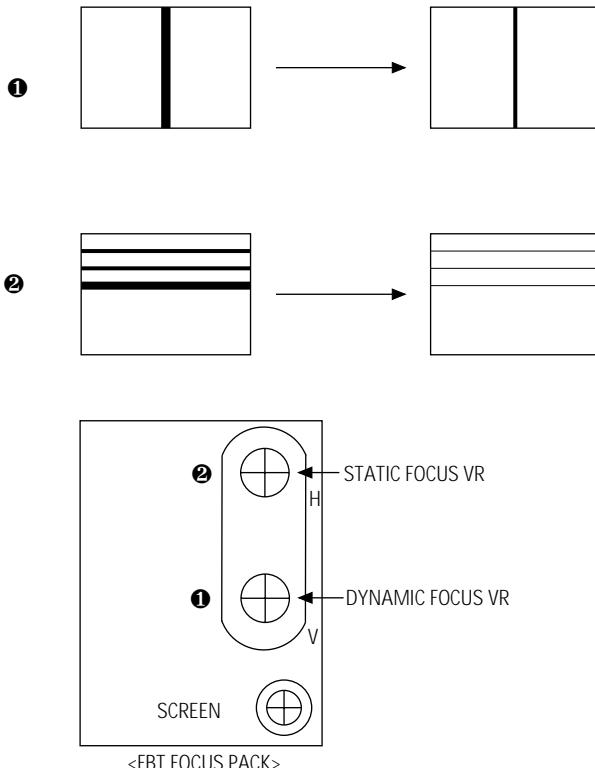
4-3 High voltage Check

CAUTION : There is no high voltage adjustment on this chassis. The B+ power supply should be +135 volts (with full color-bar input and normal picture level).

1. Connect a digital voltmeter to the second anode of the picture tube.
2. Turn on the TV. Set the Brightness and Contrast controls to minimum (zero beam current).
3. Adjust the Brightness and contrast controls to both extremes. Ensure that the high voltage does not exceed 32 KV under any conditions.

4-4 Dynamic Focus Adjustment

1. A dynamic focus adjustment should be done after replacing the CRT PCB, FBT or CRT.
2. Input a crosshatch pattern.
3. Enter " STANDARD " in video mode.
4. Turn the Dynamic focus VR fully clockwise (maximum).(①)
5. Turn the Static focus VR fully counterclockwise (maximum).(②)
6. Slowly turn the static focus VR counterclockwise. Adjust until the vertical line in the middle of the screen has maximum clarity.(①)
7. Slowly turn the dynamic focus VR (clockwise) and adjust the 3rd horizontal line for maximum clarity.(②)
8. Repeat 4-7, if necessary.



4-5 SCREEN Adjustment

1. Input Toshiba Pattern
2. Enter "Service Mode".(Refer to "Service Mode")
3. Select "G2-Adjust".
4. Set the values as below.

IBRM = 220
WDRV = 35
CDL = 220
COLR G B = 150 150 150

5. Turn the SCREEN VR until "MRCR G B" and "MRWDG" are green and those value are about 100.
(The incorrect SCREEN Voltage may result that "MRCR G B" and "MRWDG" should be red)

Note 1. When you do not have Toshiba Pattern, follow this method.

1. Set the TV on the condition that AV mode no signal(black)
2. Enter the "Menu" and set the mode to blue screen off.
3. Enter the "Service Mode".
4. Select " G2-Adjust".
5. Set the values as below.

IBRM = 220

WDRV = 35

CDL = 220

COLR G B = 150 150 150

6. Turn the SCREEN VR until the value of " MRCR G B" is about 120. Do not mind that the "OSD" Color is red.

■ After completing G2-Adjust, follow this procedure.

- ① Enter the "Video Adjust 1".
- ② Choose any item in menu. (ex. Select "Red Cutoff")
- ③ Change the value of item you select, and recover the value.

For example, when the value of "Red Cutoff" is 127, change the value to 128 and restore the value to 127.

If you do not follow this procedure, the picture may be abnormal.

For example, when the TV set is on, the picture becomes brighter gradually.

4-6 E²PROM (IC902) Replacement

1. When IC902 is replaced, all adjustment data revert to the initial values.
So, all adjustment values when servicing should be readjusted.
2. After IC902 is replaced, connect the AC power supply cord.
3. Turn the power switch ON.
4. In stand-by, warm up the TV for at least 10 seconds.
5. Power on the TV.

4-7 White Balance Adjustment

- Equipment : Color-Analyzer (CA-100)
- Input Signal : Pattern signal (Toshiba pattern)

1. Select STANDARD from the menu.
2. Input an 100% White pattern.
3. Enter the "Service Mode". (Refer to "4-8 Service Mode")
4. Warm up the TV set at least for 30 minutes.
5. Input a Toshiba pattern signal.
6. Enter the "Video Adjust1".
 - Adjust "Sub Contrast" so that Y (luminance) becomes 40 ft ± 3.
 - Use "Red Drive" and "Blue Drive" to adjust High-Light (x : 290, y : 300)
 - Adjust "Sub Bright" so that Y (luminance) becomes 1.3ft ± 0.3.
 - Use "Red Cutoff" and "Blue Cutoff" to adjust Low-Light (x : 290, y : 300).
7. Adjust CA-100 so that the final adjustment value can be fixed.
8. Use the Channel Up/Down (▲/▼) buttons to move the cursor on the adjustment modes.
9. Use the Volume +/- buttons to change the adjustment value.

4-8 Factory Adjustment

4-8-1 Service Mode

- To enter the “Service Mode”, Press the remote-control keys in this sequence :

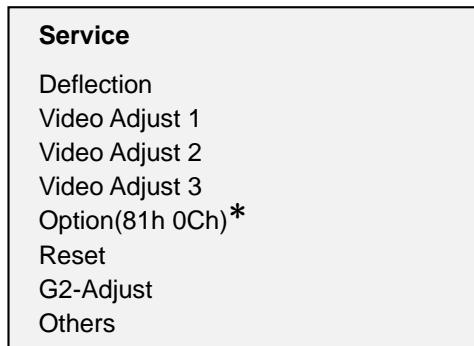
- If you do not have Factory remote-control



- If you have Factory remote-control



- After the Service Mode is entered, the initial screen is as shown in the figure below.



* These hexa digits are check sum value which depends on the MICOM.
If check sum value is changed, the value of E'PROM Data newly initialed.

- Use the Channel Up/Down buttons to move the cursor in the adjustment parameters.

Note 2.

- When CRT, CRT PCB, FBT, E'PROM (sometimes MICOM) is replaced, the adjustment values should be controlled.
- After the Service adjustment is completed, Do not select “Reset” in the service mode menu.
(After above procedure is done, power is on initially and the “Plug and Play” will be operated.)

4-8-2 Memory Data

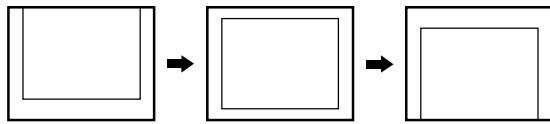
4-8-2(A) DEFLECTION (GEOMETRIC ADJUSTMENT VALUE)

Fixed Value

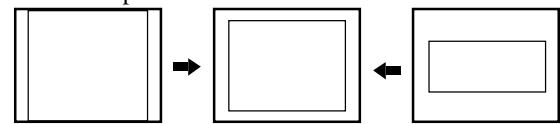
No.	OSD	Range	Initial Value	Function	Remark
1	V Shift	-128 ~ -127	-30	Adjust Vertical Picture Position	
2	V Amp	-128 ~ -127	-7	Adjust Vertical Picture Size	
3	V Slope	-128 ~ -127	-3	Adjust Vertical Slope Correction	
4	V SC	-128 ~ -127	-17	Adjust Vertical S-Correction	Not to be adjusted
5	H EW	-128 ~ -127	73	Adjust Horizontal Picture Size	
6	H Trapizium	-128 ~ -127	-47	Adjust Horizontal Trapeziod	
7	H Parabola	-128 ~ -127	-7	Adjust Horizontal Parabola Wave	
8	H Symmetry	-128 ~ -127	13	Adjust Horizontal Symmetry	Not to be adjusted
9	H Corner	-128 ~ -127	23	Adjust Horizontal Corner	
10	H Shift	-128 ~ -127	13	Adjust Horizontal Position	
11	PIP Contrast	0 ~ 15	8	Adjust PIP Contrast	
12	PIP Tint	0 ~ 63	0	Adjust PIP Tinit	
13	PIP PAL V Pos	0 ~ 255	26	Adjust PIP Vertical Position (Main Picture is PAL)	
14	PIP NTSC V Pos	0 ~ 255	23	Adjust PIP Vertical Position (Main Picture is NTSC)	
15	PIP H Pos	0 ~ 255	30	Adjust PIP Horizontal Position	
16	PIP BLKLG	0 ~ 15	6	Adjust PIP Green Cutoff Level	

4-8-2(B) SCREEN CHANGE (I2C BUS GEOMETRIC ADJUSTMENT)

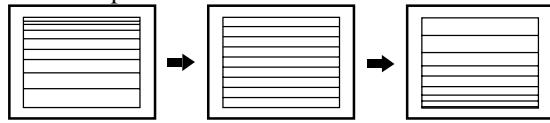
1 V Shift



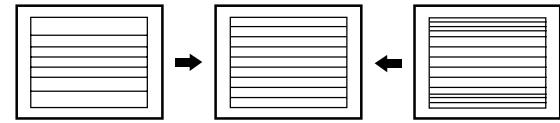
6 V Amp



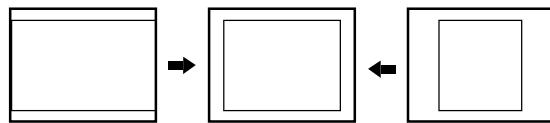
2 V Slope



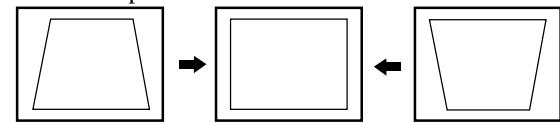
7 V SC



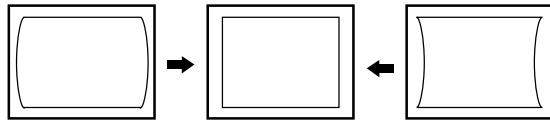
3 H EW



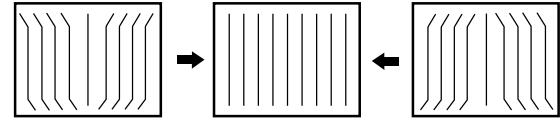
8 H Trapizium



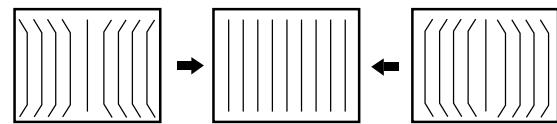
4 H Parabola



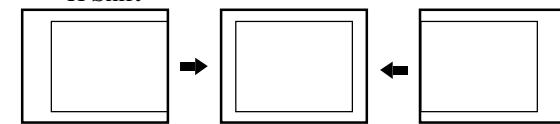
9 H Symmetry



5 H Corner



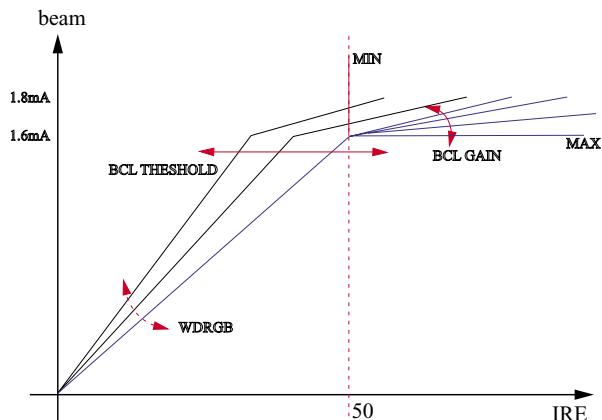
10 H Shift



4-8-2(C) VIDEO ADJUST 1

	Fixed Value
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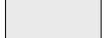
No.	OSD	Range	Initial Value	Function	Remark	
1	Red Cutoff	0 ~ 255	127	Adjust Red Cutoff Level	Low Light	
2	Green Cutoff	0 ~ 255	127	Adjust Green Cutoff Level		
3	Blue Cutoff	0 ~ 255	127	Adjust Blue Cutoff Level		
4	Red Drive	0 ~ 255	127	Adjust Red Output Gain	High Light	
5	Green Drive	0 ~ 255	127	Adjust Green Output Gain		
6	Blue Drive	0 ~ 255	127	Adjust Blue Output Gain		
7	Sub Bright	0 ~ 200	100	Adjust Brightness Level	Low Light	
8	Sub Contrast	0 ~ 13	50	Adjust Contrast Level	High Light	
9	Sub Color	0 ~ 27	27	Adjust Color Level	Not to be adjusted	
10	Sub Tint	0 ~ 100	80	Adjust Tint		
11	BCL Threshold	0 ~ 255	65	Adjust Beam Control Limit Refer to Note 3		
12	BCL Gain	0 ~ 15	8			
13	BCL Time	0 ~ 15	9			
14	TTX Contrast	0 ~ 255	90	Adjust OSD/TTX Contrast		
15	YC Delay	0 ~ 8	*	Refer to Table 1		

Note 3. Beam Control Limit Characteristic**Table 1. YC Delay Adjustment Table**

YC Delay	PAL					SECAM					NTSC	
	Def.	BG	DK	I	L	Def.	BG	DK	I	L	Def.	M
Value	4	3	6	6	7	1	1	5	8	5	4	3

✓ The "Def." means that TV is in AV mode.

4-8-2(D) VIDEO 2 ADJUST

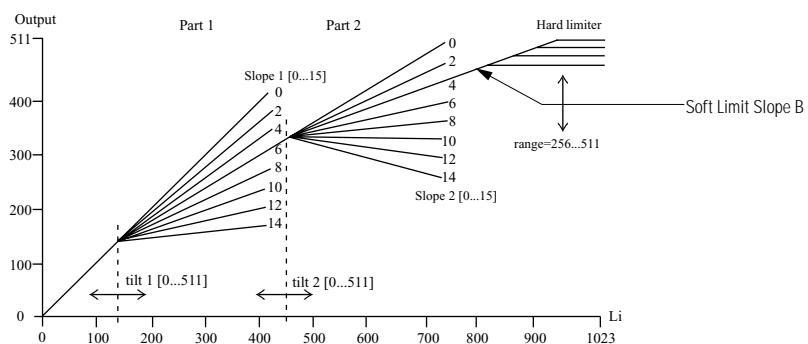
 Fixed Value

No.	OSD	Range	Initial Value	Function	Remark
1	B stretch-BTHR	0 ~ 55	50	Black Stretch Threshold	
2	B stretch-BTLT	0 ~ 15	8	Black Stretch Tilt Position	
3	B stretch-BAM	0 ~ 31	4	Black Stretch Amount	
4	Coring	10 ~ 31	20	Luma Peaking Filter Coring	
5	RGB Bright	0 ~ 255	45	OSD/TTX RGB Bright	
6	RGB Contrast	0 ~ 255	15	OSD/TTX RGB Contrast	
7	EHT Time	0 ~ 15	0	Electronic High Tension Response Time	
8	EHT Compensation	0 ~ 255	90	Electronic High Tension Coefficient	

✓ Coring : The Value of Center Frequency for the active bandwidth.

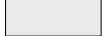
4-8-2(E) VIDEO 3 ADJUST

No.	OSD	Range	Initial Value	Function	Remark
1	Peak Threshold	0 ~ 255	185	White Peak Level Threshold	
2	Soft Limit Slope B	0 ~ 15	4	Refer to Picture Below	Refer to Note Below
3	Hard Limit	0 ~ 255	255		
4	Peak Video Ref	0 ~ 4	0	White Peak Level Threshold Reference	
5	Peak Video Gain	0 ~ 5	0	White Peak Level Threshold Gain	
6	ACC-REF(PAL/NTSC)	0 ~ 40	33	Auto Color Control	
7	ACCR(SECAM)	0 ~ 39	39		

Note 4. Soft Limit & Hard Limit

✓ "Soft Limit" is that Limitting the peak white without feed-back, but "Peak Limit" is that with feed-back for white peak level

4-8-2(E) OPTION

 Fixed Value

No.	OSD	Initial 	Function	Remark
1	Language		Arab, Iran, Lybya, CIS	OSD Language
2	Sound		A2/NICAM, V-Dolby, Mono, L-Stereo	Depending on IC601 Refer to Note 5
3	CRT		4:3, Wide, Q(12.8:9), 4:3-16:9, Q-16:9	S:S-VHS, D:DVD
4	AV Mode		2Scart, 2Scart+S, 1RCA, 2RCA, 2RCA+S, 2RCA+D, 2RCA+S+D, 1Scart	
5	X-Ray		Off, On	
6	Tilt Control		Off, On	
7	Auto FM		Off, On	
8	PIP		2-Tuner, 1-Tuner, Off	
9	Txt Language		Arabic, Farsi, Arab-Hebrew, West Europe, East Europe, Russian, Greek-Turkey	
10	LNA		Off, On	When PIP is "2-Tuner", set to "ON"
11	Equalizer		Off, On	
12	High Deviate		Off, On	
13	TTX On/Off		Off, On	
14	AV by CH key		Off, On	Without "TV/VIDEO" key in the front panel, set to "On"

 Initial Value : Refer to Note 6 on the next page.
Note 5.

Sound	IC601
A2/NICAM	MSP3400D, MSP3410D
V-DOLBY	MSP3411G
Mono	
L-Stereo	Not used this mode for KS3A Chassis

Note 6. Option.

	CS29A5WT8X/UMG	CS29A6PF8X/HAC	CS29A6WT8X/BWT	CS29A5MT9X/BWT
Description	Initial Value	Initial Value	Initial Value	Initial Value
LANGUAGE	Arab	Arab	CIS	CIS
SOUND	V-Dolby	V-Dolby	A2/Nicam	A2/Nicam
CRT	4:3	4:3	4:3	4:3
AV MODE	2 RCA + S	2 RCA + S	2 SCART + S	2 SCART + S
X-RAY	OFF	OFF	OFF	OFF
TILT CONTROL	ON	ON	ON	ON
AUTO FM	ON	ON	ON	ON
PIP	OFF	2-Tuner	OFF	2-Tuner
TEXT LANGUAGE	Arabic	Farsi	RUSSIAN	RUSSIAN
LNA	OFF	ON	OFF	ON
EQUALIZER	ON	ON	ON	ON
HIGH DEVIATE	ON	ON	ON	ON
TTX ON/OFF	ON	ON	ON	ON
AV BY CH KEY	ON	OFF	OFF	ON
OPTION BYTE	84 CC D8	85 DC 5E	83 AC 28	83 AC AE

4-8-2(F) OTHERS

 Fixed Value

No.	OSD	Range	Initial Value	Function	Remark
1	VSU	96 ~ 111	98	Vertical Set Up Time	
2	H QEW	-30 ~ 30	0		
3	H ZOOM Parabola	-30 ~ 30	8	Adjust Horizontal Parabola in Zoom Mode	
4	H 16:9 Parabola	-30 ~ 30	-15	Adjust Horizontal Parabola in 16:9 Mode	
5	TTX H Shift	-30 ~ 30	6	Adjust Horizontal OSD/TTX Position	
6	Mono Sound System	BG/DK/I/M	BG		
7	V Slice Level	0 ~ 3	2		
8	Melody Volumn	0 ~ 20	8	Adjust Melody Volumn	

4-9 MICOM

4-9-1 Pin Layout

Write Protect		1	I/O	PWM	52		Tilt
EEPROM SDA		2	I/O		51		N.C.
EEPROM SCL		3	IO		50		Power
Bus-Stop		4	I/O	I/O	49		Sound Mute
Main SDA		5	I/O		48		N.C.
Main SCL		6	I/O		47		N.C.
Sound Reset		7	I/O		46		PX. Y
Video Reset		8	I/O		45		PX. Y
VDD 2.5V		9			44		VDD 3.3V
GND		10			43		GND
VDD 3.3V		11			42		VDD 2.5V
CVBS Input		12			41		CORE
VDD 2.5V		13			40		OSD-B
GND		14			39		OSD-G
AFT		15	ADC		38		OSD-R
Scart1 Ident		16	ADC		37		VDD 2.5V
Scart2 Ident		17	ADC		36		GND
Key 1		18	ADC		35		X-TAL Out
H-Sync		19			34		X-TAL In
V-Sync		20			33		MICOM Reset
Key 3		21	I/O		32		N.C.
Key 2		22	I/O		31		N.C.
X-Ray Protect		23	I/O		30		VDD 3.3V
IR Input		24	I/O		29		GND
Stand-By LED		25	I/O		28		N.C.
Time LED		26	I/O	I/O	27		Relay

4-9-2 Pin Assignment Specification

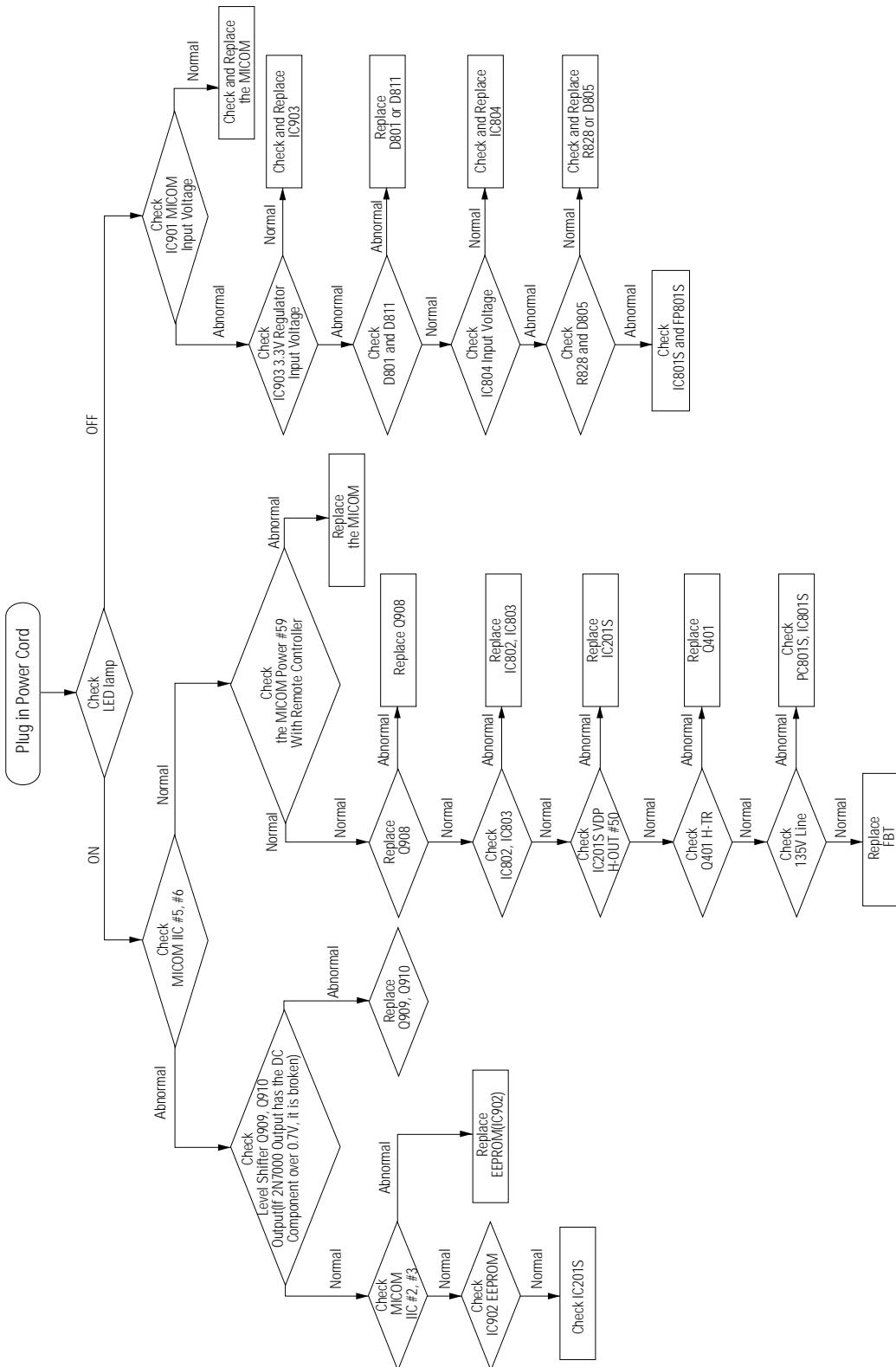
PIN NO	FUNCTION	ASSIGN	IN/OUT	ACTIVE H/L	DESCRIPTION
1	I/O	Write Protect	Out	Low	EEPROM Write Protection
2	I/O	ROM SDA	I/O		EEPROM Serial Data Line
3	I/O	ROM SCL	I/O		EEPROM Serial Clock Line
4	I/O	Bus Stop	In	Low	Disable Micom IIC
5	I/O	Main SDA	I/O		Peripheral IC Serial Data Line
6	I/O	Main SCL	I/O	Low	Peripheral IC Serial Clock Line
7	I/O	Sound Reset	Out	Low	MSP IC Initial Control
8	I/O	Video Reset	Out		VDP IC Initial Control
9	Vdd	VDD 2.5V			
10	GND				
11	Vdd	VDD 3.3V			
12	CVBS	CVBS Input	In		TTX CVBS Input
13	Vdd	VDD 2.5V			Analog B+
14	GND				Analog Ground
15	ADC	AFT	In		Auto Fine Tuning Control
16	ADC	SC1-ID	In		Scart1 Ident
17	ADC	SC2-ID	In		Scart2 Ident
18	ADC	Key1	In		Key1 Input
19	HS	H-Sync	In		Horizontal Sync Input
20	VS	V-Sync	In		Vertical Sync Input
21	I/O	Key3	In		Key3 Input
22	I/O	Key2	In		Key2 Input
23	I/O	X-Ray	In		X-Ray Protection
24	I/O	IR-In	In		Remocon Signal Input
25	I/O	STD-LED	Out		LED Drive Output(Red)
26	I/O	TIM-LED	Out		LED Drive Output(Green)

4-9-2 Pin Assignment Specification (Continued)

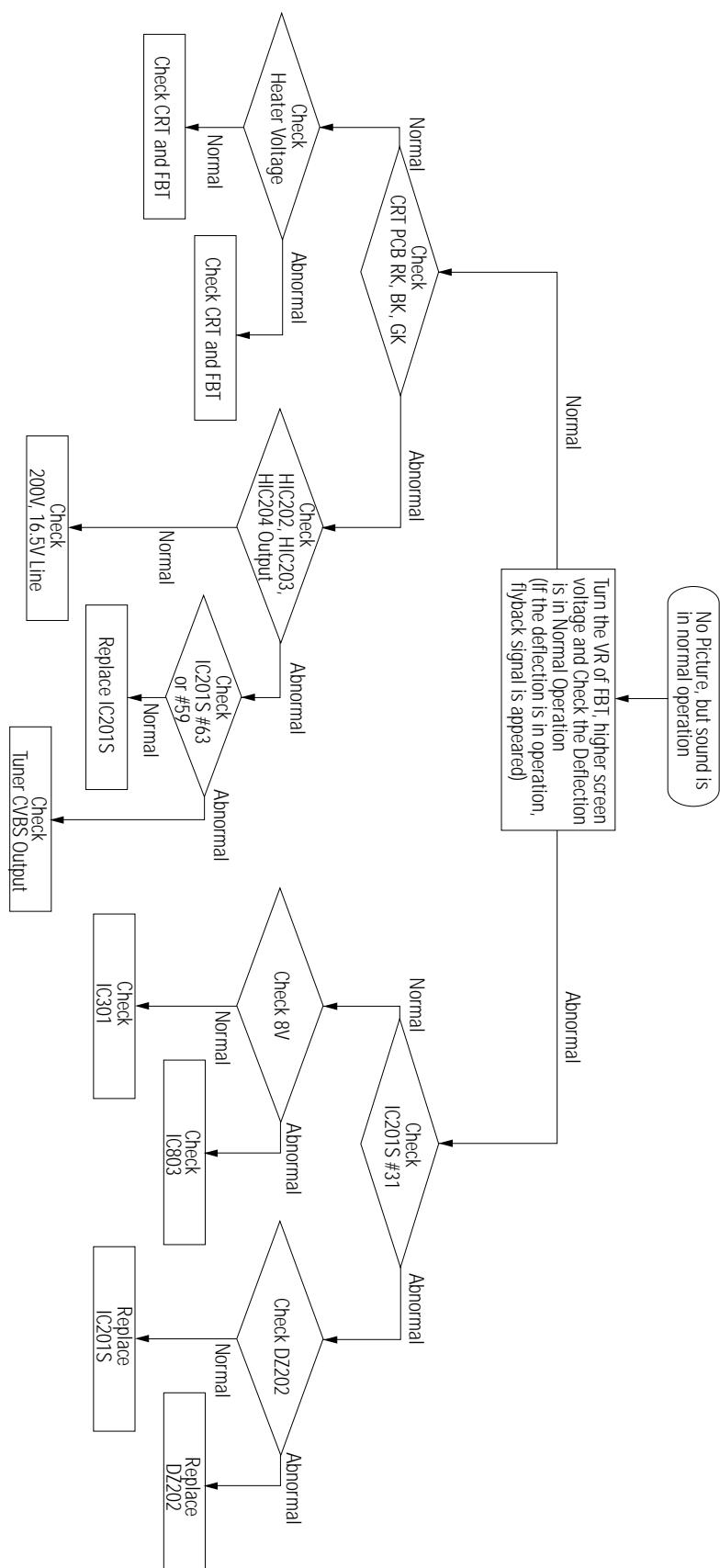
PIN NO	FUNCTION	ASSIGN	IN/OUT	ACTIVE H/L	DESCRIPTION
27	I/O	Relay	Out	Low	Activate Degaussing Coil
28	N.C.				Not Used (Programmed Ground Level)
29	GND				Analog Ground
30	Vdd	VDD 3.3V			Not Used (Programmed Ground Level)
31	N.C.				Not Used (Programmed Ground Level)
32	N.C.				Micom Hardware Reset
33	Reset	Reset	In	Low	Crystal Oscillation Input
34	X-In	X-TAL In	In	6MHz	Crystal Oscillation Output
35	X-Out	X-TAL Out	Out	6MHz	Analog Ground
36	GND				Analog B+
37	Vdd	VDD 2.5V			OSD/TTX Output (Red)
38	R	OSD-R	Out		OSD/TTX Output (Green)
39	G	OSD-G	Out		OSD/TTX Output (Blue)
40	B	OSD-B	Out		Fast Blank/Half Contrast Output
41	COR	CORE	Out		
42	Vdd	VDD 2.5V			
43	GND				
44	Vdd	VDD 3.3V			
45	I/O	PX.Y	In		When The Caption Function Adopted, Used.
46	I/O	PX.Y	Out		
47	N.C.				Not Used (Programmed Ground Level)
48	N.C.				
49	I/O	S-Mute	Out	High	Sound Amp Mute
50	I/O	Power	Out	Low	Picture On/Off Control
51	N.C.				Not Used (Programmed Ground Level)
52	I/O	Tilt	Out	PWM	Tilt Control Output

5. Troubleshooting

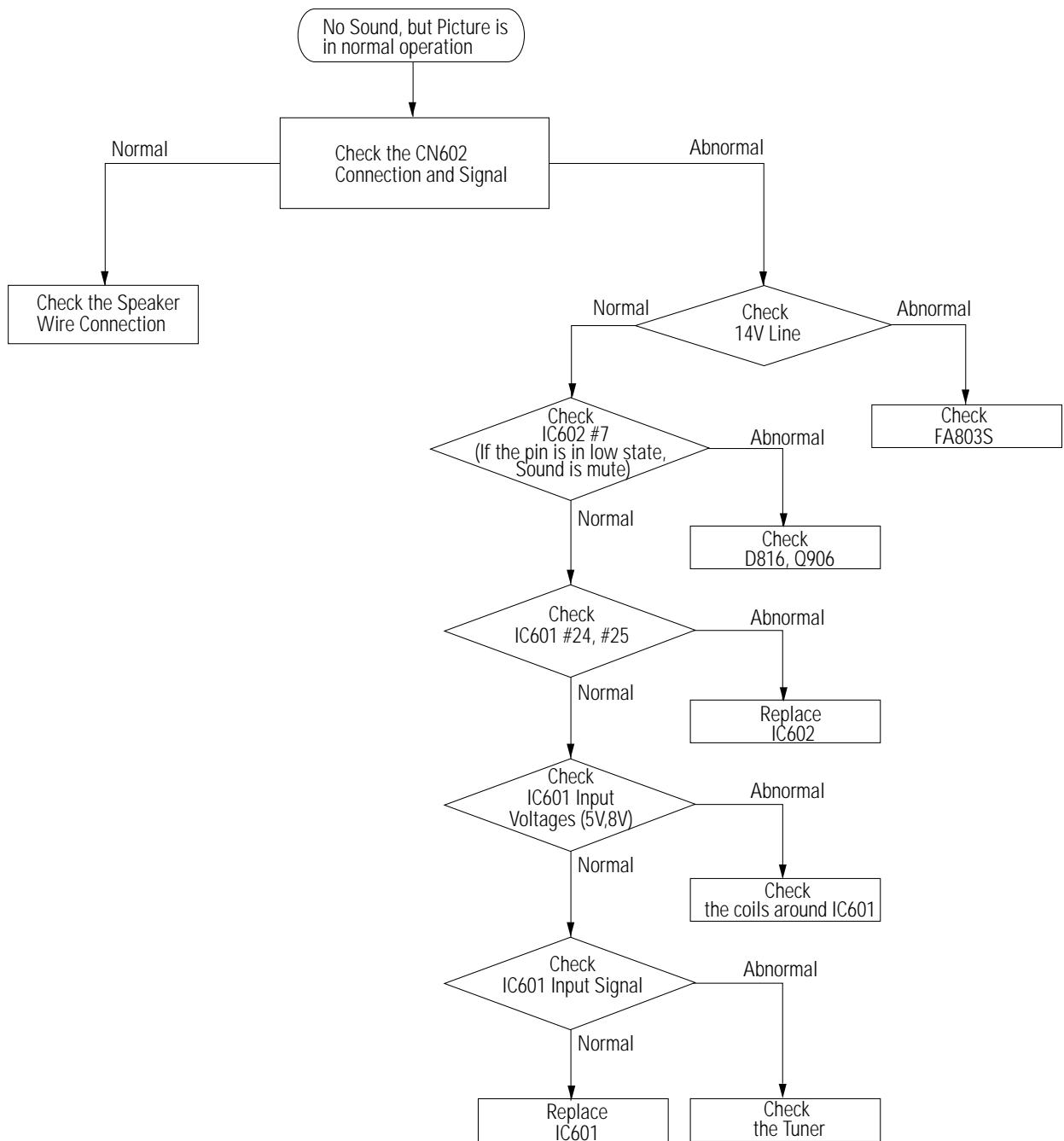
5-1 No Power



5-2 No Picture



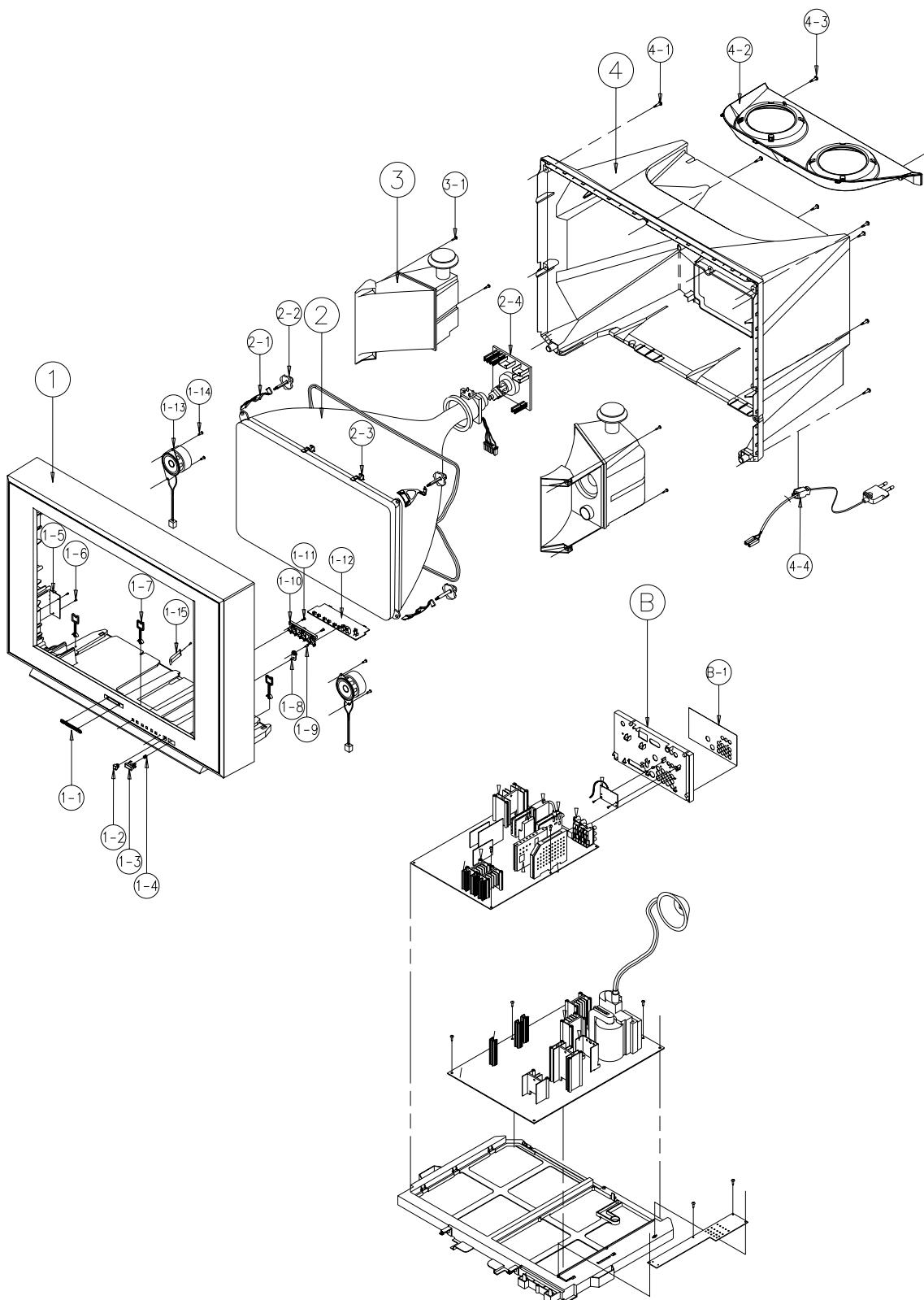
5-3 No Sound



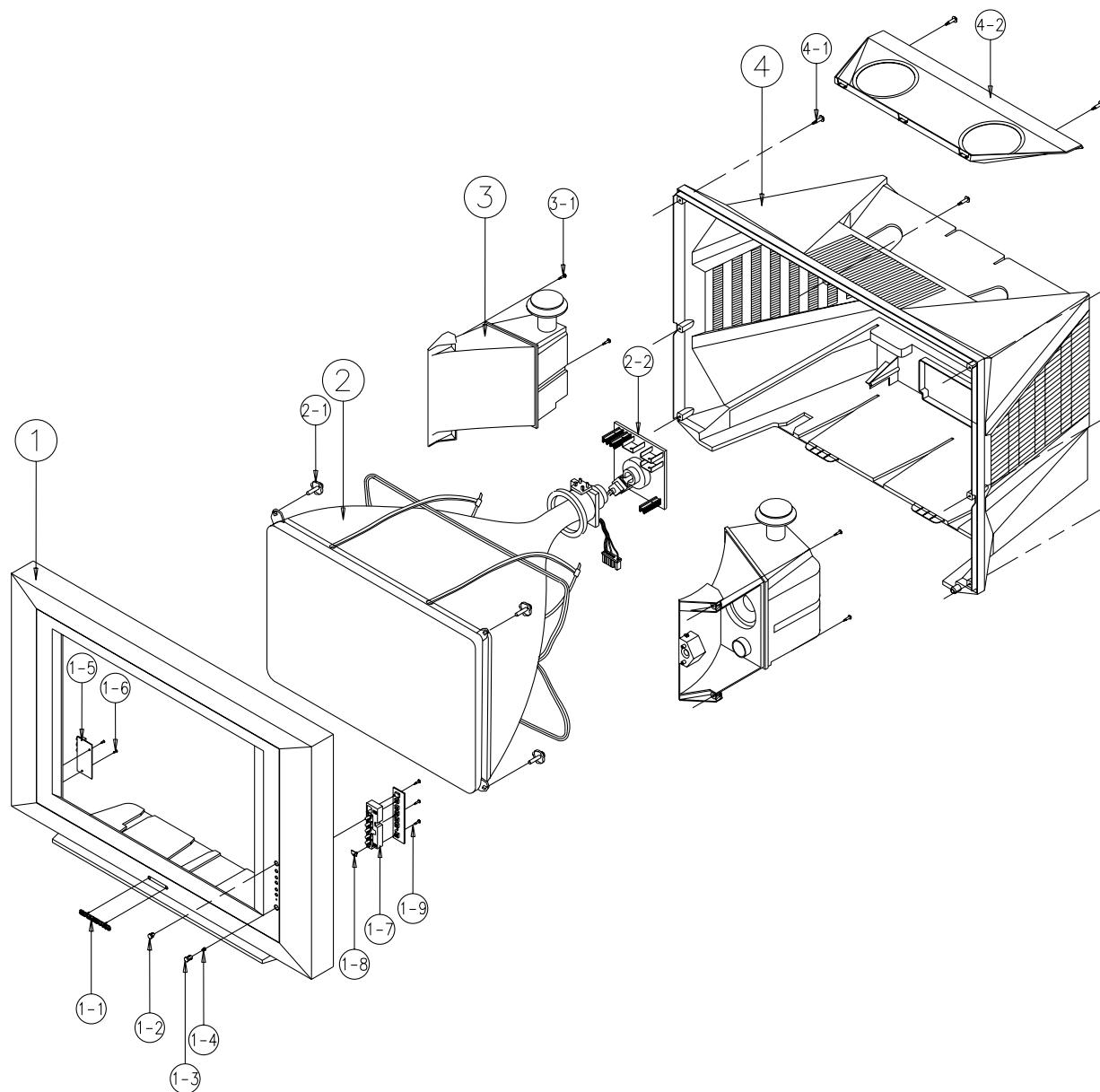
MEMO

6. Exploded View & Parts List

6-1 CS29A6WT8X/BWT



No	Code No	Description	Specification	Q'ty	Remark
1	AA64-01222C	CABINET FRONT	:29A6 KS3A PLANO,S704+B702	1	
1-1	AA64-70117B	BADGE-BRAND	:AL,SS,SILVER,L65,R2000,-,-	1	
1-2	AA64-40516B	WINDOW-REMOCON	:29A6,-,PC,V0,VIOLET,-	1	
1-3	AA64-10792B	KNOB-POWER	:29A6,NO-SILK SV704P+W971 ,A	1	
1-4	AA61-60003J	SPRING-CS	:SUS304,0.5,OD6,H12,N7,-,-	1	
1-5	AA95-00682A	ASSY-PCB,A/V SIDE	:29A6,29A5,KS3A,PAL,-	1	
1-6	6002-000522	SCREW-TAPPING	:TH,+,2,M4,L15,ZPC(BLK),SWR	2	
1-7	AA65-00011C	CLAMP-WIRE	:ALL MODEL, NYLON 66,V2,NTR,25M	3	
1-8	AA64-40517B	INDICATOR-LED	:,-,-,ACRYL,-,CLEAR,-	1	
1-9	6003-001019	SCREW-TAPTITE	:RH,+,B,M4,L12,ZPC(BLK),SWR	1	
1-10	AA64-00028A	KNOB-CONTROL	:29A6,SV808P+W971,ABS,HB,G	1	
1-11	6003-001019	SCREW-TAPTITE	:RH,+,B,M4,L12,ZPC(BLK),SWR	2	
1-12	AA95-00558A	ASSY PCB CONTROL	:KS3A,29A6,-	1	
1-13	AA91-00335A	ASSY HOLDER SPK	:PP,8ohm/15W,blk,housin	2	
1-14	6003-001019	SCREW-TAPTITE	:RH,+,B,M4,L12,ZPC(BLK),SWR	4	
1-15	AA61-10054A	BRACKET-CRATER	:6277,STS304,T0.5,-,-	1	
2	AA03-00075A	CRT-COLOR	:A68QCP891X003(C),+380MG,29IN	1	
2-1	AA65-30113A	CLAMP-D,COIL	:NYLON 66,V2,BLK,TVI 25-29,-	4	
2-2	AA60-10050A	SCREW-ASSY	:WP,RH,+,M4,L25,SWRCH18A,-,ZPC	4	
2-3	AA65-30113A	CLAMP-D,COIL	:NYLON 66,V2,BLK,TVI 25-29,-	4	
2-4	AA95-00700A	ASSY PCB CRT	:KS3A,29A6,-,PAL	1	
3	AA91-00334B	ASSY HOLDER SPK	:PP,8ohm/15W,BLK,AA91-0	1	
3-1	AA60-10050A	SCREW-ASSY	:WP,RH,+,M4,L25,SWRCH18A,-,ZPC	4	
4	AA64-00027C	CABINET-BACK	:72A6,-,HIPS,V2,BLK,-,-	1	
4-1	6003-001025	SCREW-TAPTITE	:RH,+,B,M4,L20,ZPC(BLK),SWR	7	
4-2	AA63-00005C	COVER-TOP,SPEAKER	:72A6,-,HIPS,V2,BLK,-	1	
4-3	6003-001025	SCREW-TAPTITE	:RH,+,B,M4,L20,ZPC(BLK),SWR	2	
4-4	AA96-20130C	ASSY-POWER,CORD	:CP2/NO(4.0R),H/C300MM,	1	
B	AA63-00164B	TERMINAL-BOARD,ANT	:HIPS VO BLK,-,D3,32	1	
B-1	AA64-00894B	INLAY BACK	:D2,D3,SCART(2),PS SHEET,T0.3,	1	

6-2 CS29A5WT8X/XSG

No	Code No	Description	Specification	Q'ty	Remark
1	AA64-31106J	CABINET FRONT	:CS-29A5WT KS3A PLANO,S704P	1	
1-1	AA64-70117B	BADGE-BRAND	:AL,SS,SILVER,L65,R2000,-,-	1	
1-2	AA64-40455A	WINDOW-REMOCON	:-,725A,-,PC,-,VIOLET,-	1	
1-3	AA64-10709A	KNOB-MASTER	:-,295A,VT803M MASTER,ABS,HB,	1	
1-4	AA61-60005D	SPRING-CS	:-,SUS304,0.4,OD5.5,H9,N4,-,-	1	
1-5	AA41-00155A	PCB-SIDE AV	:-KS3A,1L,FR-1,245x245x1.6T,8A	1	
1-6	6002-000522	SCREW-TAPPING	:-TH,+,2,M4,L15,ZPC(BLK),SWR	2	
1-7	AA64-10710A	KNOB-CONTROL	:-,725A,-,ABS,HB,GRAY	1	
1-8	AA64-40456B	INDICATOR-LED	:-,295A,-,ACRYL,-,CLR,-	1	
1-9	6002-000514	SCREW-TAPPING	:-RH,+,2,M4,L15,ZPC(BLK),SWR	3	
2	AA03-00075A	CRT-COLOR	:-,A68QCP891X003(C),+380MG,29IN	1	
2-1	AA60-10050V	SCREW-ASSY	:-WC,HH,+,M6,L30,SWRCH18A,ZPC(S	4	
2-2	3704-001032	SOCKET-CRT	:-8P,29PI,35.5PI,AU30U	1	
3	* AA91-00333B	ASSY HOLDER SPK	:-,PP,8ohm/15W,BLK,AA91-0	1	
3-1	AA60-10050V	SCREW-ASSY	:-WC,HH,+,M6,L30,SWRCH18A,ZPC(S	4	
4	AA64-31107D	CABINET-BACK	:-,29A5,-,HIPS,HB,BLK,-,-	1	
4-1	AA60-10050T	SCREW-TAPPING	:-RH,+,2S,M4,L20,ZPC(BLK),SW	7	
4-2	AA63-30213D	COVER-TOP,SPK	:-,29A5,-,HIPS,HB,BLK,-,-	1	

Loc. No.	Code No.	Description ; Specification	Remark	Loc. No.	Code No.	Description ; Specification	Remark
SWY04	3404-000176	SWITCH-TACT:12V,50mA,120gf,6x6mm,SPST					
SWY05	3404-000176	SWITCH-TACT:12V,50mA,120gf,6x6mm,SPST					
SWY06	3404-000176	SWITCH-TACT:12V,50mA,120gf,6x6mm,SPST					
SCREW	6001-000057	SCREW-MACHINE:RH,+,M3,L6,ZPC(BLK),SWRCH1					
PCB	AA41-00299A	PCB-CONTROL:CS29A5WT,FR-1,1L,A,1.6T,245x					
RYM01	AA59-60002B	MODULE-REMOCON:-,ORC-50HF,38KHZ,940MM,ME					
DZY01	0403-000508	DIODE-ZENER:MTZJ5.6B,5.6V,5.45-5.73V,500					
RY03	2001-000007	R-CARBON:3KOHM,5%,1/8W,AA,TP,1.8X3.2MM					
RY05	2001-000009	R-CARBON:20KOHM,5%,1/8W,AA,TP,1.8X3.2MM					
RY01	2001-000020	R-CARBON(S):220HM,5%,1/2W,AA,TP,2.4X6.4M					
RY02	2001-000577	R-CARBON:2KOHM,5%,1/8W,AA,TP,1.8X3.2MM					
RY04	2001-000878	R-CARBON:6.2KOHM,5%,1/8W,AA,TP,1.8X3.2MM					
CN811	AA39-20179F	LEAD CONNECTOR-ASSY:-,-,3(2)P,-,-,YF					
CNY01	AA39-20546E	LEAD CONNECTOR-ASSY:-,-,5P,-,-,YBNH2					
CNY02	AA39-00106B	LEAD CONNECTOR-ASSY:-,-,4P,-,-,YBNH2					

ASSY-PCB,A/V SIDE

* AA95-00682AASSY-PCB,A/V SIDE:-,29A6,29A5,KS3A,PAL,-

JH701	3722-000143	JACK-PHONE:1P(VER).3.4mm,AG,BLK,NO	
JA701	3722-001031	JACK-RCA:3P,3.6MM,#18,AU	
JS701	3722-001163	JACK-VHS:4P,12mm,AU,BLK,N	
CN704	AA39-00070A	LEAD CONNECTOR-ASSY:-,-,-,-,-,YB	
CN705	AA39-20009E	LEAD CONNECTOR-ASSY:-,YFH800-01,-,1P,600	
CN701	AA39-20068G	LEAD CONNECTOR-ASSY:-,YBNH025-08,67096-0	
CN703	AA39-20069A	LEAD CONNECTOR-ASSY:-,YBNH025-05,67096-0	
PCB	AA41-00155A	PCB-SIDE AV:KS3A,1L,FR-1,245x245x1.6T,8A	
R701	2001-000028	R-CARBON(S):1000HM,5%,1/2W,AA,TP,2.4X6.4	
R702	2001-000028	R-CARBON(S):1000HM,5%,1/2W,AA,TP,2.4X6.4	
R703	2001-000969	R-CARBON:750HM,5%,1/8W,AA,TP,1.8X3.2MM	
R704	2001-000969	R-CARBON:750HM,5%,1/8W,AA,TP,1.8X3.2MM	
C701	2202-000121	C-CERAMIC,MLC-AXIAL:100pF,10%,50V,Y5P,TP	
C702	2202-000121	C-CERAMIC,MLC-AXIAL:100pF,10%,50V,Y5P,TP	
C703	2202-000231	C-CERAMIC,MLC-AXIAL:330pF,10%,50V,Y5P,TP	
C704	2202-000231	C-CERAMIC,MLC-AXIAL:330pF,10%,50V,Y5P,TP	
C707	2202-000231	C-CERAMIC,MLC-AXIAL:330pF,10%,50V,Y5P,TP	
C708	2202-000231	C-CERAMIC,MLC-AXIAL:330pF,10%,50V,Y5P,TP	
C705	2401-002009	C-AL:100uF,20%,16V,GP,TP,6.3x7,5	
C706	2401-002009	C-AL:100uF,20%,16V,GP,TP,6.3x7,5	
L701	2701-000114	INDUCTOR-AXIAL:10uH,10%,2.5x3.4mm	
L702	2701-000114	INDUCTOR-AXIAL:10uH,10%,2.5x3.4mm	
L703	2701-000114	INDUCTOR-AXIAL:10uH,10%,2.5x3.4mm	
L704	2701-000114	INDUCTOR-AXIAL:10uH,10%,2.5x3.4mm	
L707	3301-000287	CORE-FERRITE BEAD:AA,3.5x1.0x6.0mm,1500,	
L708	3301-000287	CORE-FERRITE BEAD:AA,3.5x1.0x6.0mm,1500,	
L705	2701-000168	INDUCTOR-AXIAL:3.3uH,5%,2.5x3.4mm	
L706	2701-000168	INDUCTOR-AXIAL:3.3uH,5%,2.5x3.4mm	
CN702	AA39-20070J	LEAD CONNECTOR-ASSY:-,-,7P,-,-,YBNH2	

ASSY-POWER,CORD

* AA96-20109CASSY-POWER,CORD:-,CP2/NO(4.0),H/C300,KKP

AA39-10006X POWER-CORD:-,KKP419C,KLCE-2F,2.286MT,3P,
AA61-20284AHHOLDER:-,P-CORD,PP,VO,BLK,KE-002

REMOCON

* AA59-00104AREMOCON:-,TM59,DREAM,29,L/GRAY,-,EX,PA

Loc. No.	Code No.	Description ; Specification	Remark	Loc. No.	Code No.	Description ; Specification	Remark
R948	2001-000281	R-CARBON:100OHM,5%,1/8W,AA,TP,1.8X3.2MM		AA65-30113A CLAMP-D,COIL:NYLON 66,V2,BLK,TVI 25-29,-			
RF02	2001-000734	R-CARBON:4.7KOHM,5%,1/8W,AA,TP,1.8X3.2MM		AA61-60003J SPRING-CS-,SUS304,0.5,0D6,H12,N7,-,-,-			
RF03	2001-000362	R-CARBON:150OHM,5%,1/8W,AA,TP,1.8X3.2MM		AA64-01222C CABINET FRONT:29A6 KS3A PLANO,S704+B702			
RF04	2001-000449	R-CARBON:2.2KOHM,5%,1/8W,AA,TP,1.8X3.2MM		AA64-10792B KNOB-POWER:-,29A6,NO-SILK SV704P+W971,A			
RF05	2001-000522	R-CARBON:22KOHM,5%,1/8W,AA,TP,1.8X3.2MM		AA64-40516B WINDOW-REMOCON:-,29A6,-,PC,V0,VIOLET,-			
RF06	2001-000989	R-CARBON:820KOHM,5%,1/8W,AA,TP,1.8X3.2MM		AA64-40517B INDICATOR-LED:-,-,ACRYL,-,CLEAR,-			
RF07	2001-000904	R-CARBON:6200HM,5%,1/8W,AA,TP,1.8X3.2MM		AA64-60445R INLAY AV:72A6,KS3A 100Hz,PS SHEET,-,BLK			
RF08	2001-000313	R-CARBON:11KOHM,5%,1/8W,AA,TP,1.8X3.2MM		AA64-60446C INLAY—PC,JACK:29A6,L/GRAY,PS SHEET,T0.5			
RF09	2001-000221	R-CARBON:1.2KOHM,5%,1/8W,AA,TP,1.8X3.2MM		AA64-70117B BADGE-BRAND:AL,SS,SILVER,L65,R2000,-,-			
RF10	2001-000241	R-CARBON:1.5KOHM,5%,1/8W,AA,TP,1.8X3.2MM		AA65-00011C CLAMP-WIRE:ALL MODEL,NYLON 66,V2,NTR,25M			
RF11	2001-000241	R-CARBON:1.5KOHM,5%,1/8W,AA,TP,1.8X3.2MM		AA91-00335A ASSY HOLDER SPK:-,PP8ohm/15W,blk,housin			
RF12	2001-000221	R-CARBON:1.2KOHM,5%,1/8W,AA,TP,1.8X3.2MM					
RF13	2001-001179	R-CARBON(S):68KOHM,5%,1/2W,AA,TP,2.4X6.4					
RF14	2001-001071	R-CARBON(S):12KOHM,5%,1/2W,AA,TP,2.4X6.4					
RF15	2001-001100	R-CARBON(S):2.70HM,5%,1/2W,AA,TP,2.4X6.4					
RF16	2001-001179	R-CARBON(S):68KOHM,5%,1/2W,AA,TP,2.4X6.4					
RF17	2001-001000	R-CARBON(S):2.70HM,5%,1/2W,AA,TP,2.4X6.4					
RF18	2003-000458	R-METAL OXIDE(S):100ohm,5%,2W,AF,TP,4x12					
RF19	2003-001023	R-METAL OXIDE(S):120ohm,5%,2W,AF,TP,3.9x					
RF20	2003-002214	R-METAL OXIDE(S):680ohm,5%,2W,AG,TP,3.9x					
RF21	2003-002214	R-METAL OXIDE(S):680ohm,5%,2W,AG,TP,3.9x					
RF22	2003-002214	R-METAL OXIDE(S):680ohm,5%,2W,AG,TP,3.9x					
RF23	2003-000746	R-METAL OXIDE(S):56ohm,5%,2W,AF,TP,4x12m					
RF24	2003-000746	R-METAL OXIDE(S):56ohm,5%,2W,AF,TP,4x12m					
RF25	2003-002009	R-METAL OXIDE(S):390ohm,5%,2W,AF,TP,3.9x					
RG01	2004-001397	R-METAL(S):4.7Kohm,1%,1/2W,AA,TP,2.4x6.4					
RG02	2004-002022	R-METAL(S):51Kohm,1%,1/2W,AA,TP,2.4x6.4m					
RG03	2004-001987	R-METAL(S):4.3Kohm,1%,1/2W,AA,TP,2.4x6.4					
RG04	2004-002022	R-METAL(S):51Kohm,1%,1/2W,AA,TP,2.4x6.4m					
RG05	2001-001163	R-CARBON(S):5600HM,5%,1/2W,AA,TP,2.4X6.4					
RG06	2001-001100	R-CARBON(S):2.70HM,5%,1/2W,AA,TP,2.4X6.4					
RG07	2001-001100	R-CARBON(S):2.70HM,5%,1/2W,AA,TP,2.4X6.4					
RG08	2001-001163	R-CARBON(S):5600HM,5%,1/2W,AA,TP,2.4X6.4					
RL801S	3501-001040	RELAY-POWER:12VDC,500mW,10A,1FormA,15mS					
RR430S	2001-001088	R-CARBON(S):1KOHM,5%,1/2W,AA,TP,2.4X6.4M					
RX801S	2002-001010	R-COMPOSITION:1.8Mohm,5%,1/2W,AA,TP,3.7x					
RY801S	2002-001011	R-COMPOSITION:3.3Mohm,5%,1/2W,AA,TP,3.7x					
RY802S	2002-001013	R-COMPOSITION:4.7Mohm,5%,1/2W,AA,TP,3.7x					
SG501	AA27-00084A COIL:S-23,-,-,-,S-23,5000Mohm						
SG502	AA27-00084A COIL:S-23,-,-,-,S-23,5000Mohm						
SG503	AA27-00084A COIL:S-23,-,-,-,S-23,5000Mohm						
SG504	AA27-00084A COIL:S-23,-,-,-,S-23,5000Mohm						
T401	AA26-50001L TRANS-HORIZ.DRIVE:-,29mH,133uH,4.5uH,E12						
TU01S	AA40-00060A TUNER F/S:TCPS3001PD09D(S),-PAL-M(NTSC)						
VP801S	1405-000187 VARISTOR:750V,1250A,12.5x7mm,TP						
VPX801S	1405-000187 VARISTOR:750V,1250A,12.5x7mm,TP						
X201	2801-003432 CRYSTAL-UNIT:20.25MHZ,30ppm,28-AAM,13PF,						
X601	2801-003903 CRYSTAL-UNIT:18.432MHz,25ppm,28-AAM,12pF						
X901	2801-003728 CRYSTAL-UNIT:6MHz,30ppm,28-AAM,20pF,40oh						

ASSY CABINET FRONT

* AA90-00228XASSY CABINET:29A6,CS29A6WT8X/BWT
* AA91-00420GASSY CABINET FRONT:-,29A6 KS3A,(SPK)S704

AV+CF
BRAC+C
CABBAC
CB+CF
CB+TER
CRT+CF
CTS+CB
DOMESP
KCON+C
LED+CF
PCB+CF
SPKR+C
TER+RJ
AA60-000522 SCREW-TAPPING:TH,+,2,M4,L15,ZPC(BLK),SWR
6003-001026 SCREW-TAPITTE:RH,+,B,M4,L15,ZPC(BLK),SWR
AA63-60001X SPACER-FELT:FELT,T0.5,BLK,330X15,-,-
6003-001025 SCREW-TAPITTE:RH,+,B,M4,L20,ZPC(BLK),SWR
6003-001025 SCREW-TAPITTE:RH,+,B,M4,L20,ZPC(BLK),SWR
AA60-10050V SCREW-ASSY:WC,HH,+,M6,L30,SWRCH18A,ZPC(S
6003-001025 SCREW-TAPITTE:RH,+,B,M4,L20,ZPC(BLK),SWR
AA60-10050V SCREW-ASSY:WP,RH,+,M4,L25,SWRCH18A,ZPC
6003-001019 SCREW-TAPITTE:RH,+,B,M4,L12,ZPC(BLK),SWR
6003-001019 SCREW-TAPITTE:RH,+,B,M4,L12,ZPC(BLK),SWR
6006-001095 SCREW-ASS'Y TAPT:WP,BH,+,M4,L12,ZPC(YEL)
6003-001019 SCREW-TAPITTE:RH,+,B,M4,L12,ZPC(BLK),SWR
6003-001026 SCREW-TAPITTE:RH,+,B,M4,L15,ZPC(BLK),SWR
AA61-10054A BRACKET-CRATER:,-,6277,STS304,T0.5,-,-
AA63-00005C COVER-TOP,SPEAKER:,-,72A6,-,HIPS,V2,BLK,-
AA63-60004G SPACER-GUM,CRT,NTR RUBBER,T3.0,GRY,-,-
AA64-00027C CABINET-BACK:,-,72A6,-,HIPS,V2,BLK,-,-
AA64-01230B INLAY-COVER:D2,D3,PVC-SHEET,T0.4,94V0,-,
AA65-30008A CLAMP-CORD:PE,HB,BLK,-,-
AA65-30017A CLAMP-D,COIL:NYLON-66,V0,NTR,DADH300,25

ASSY-CRT

* AA94-50022DASSY-CRT:A68QCP891X001,+380MG,29,ITC,C
AA03-00075A CRT-COLOR:-,A68QCP891X003(C),+380MG,29IN

CN811
CNY01
CNY02
CY01
DZY01
LDY01
PCB
RMY01
RY01
RY02
RY03
RY04
RY05
RY06
AA39-20179A LEAD CONNECTOR-ASSY:,-,3(2)P,-,-,YF
AA39-20546C LEAD CONNECTOR-ASSY:,-,-,-,-,YB
AA39-00106A LEAD CONNECTOR-ASSY:,-,-,4P,-,-,YBNH2
2401-002144 C-AL:47uF,20%,16V,GPT,TP5x11,5
0403-000508 DIODE-ZENER:MTZJ5.6B,5.6V,45-5.73V,500
AA96-30003A ASSY-LED,GUIDE:,-,AA61-50106A,DL-G8RGA,RE
AA41-00154A PCB-CONTROL:KS3A,1L,FR-1,245x245x1.6T,4A
AA59-60001U MODULE-REMOCON:,-,ORC-50VF/SR-12V,38kHz,9
2001-000020 R-CARBON(S):220HM,5%,1/2W,AA,TP,2.4X6.4M
2001-000577 R-CARBON:2KOHM,5%,1/8W,AA,TP,1.8X3.2MM
2001-000007 R-CARBON:3KOHM,5%,1/8W,AA,TP,1.8X3.2MM
2001-000878 R-CARBON:6.2KOHM,5%,1/8W,AA,TP,1.8X3.2MM
2001-000009 R-CARBON:20KOHM,5%,1/8W,AA,TP,1.8X3.2MM
2001-000281 R-CARBON:1000HM,5%,1/8W,AA,TP,1.8X3.2MM

Loc. No.	Code No.	Description ; Specification	Remark	Loc. No.	Code No.	Description ; Specification	Remark
SW811S	3403-000179	SWITCH-PUSH;250V,5A,DPST,-,JPW-2104B					
SWY01	3404-000244	SWITCH-TACT;15V,20mA,90-170gf,7.5x7mm,SP					
SWY02	3404-000244	SWITCH-TACT;15V,20mA,90-170gf,7.5x7mm,SP					
SWY03	3404-000244	SWITCH-TACT;15V,20mA,90-170gf,7.5x7mm,SP					
SWY04	3404-000244	SWITCH-TACT;15V,20mA,90-170gf,7.5x7mm,SP					
SWY05	3404-000244	SWITCH-TACT;15V,20mA,90-170gf,7.5x7mm,SP					
SWY06	3404-000244	SWITCH-TACT;15V,20mA,90-170gf,7.5x7mm,SP					

ASSY-PCB,A/V SIDE

* AA95-00682AASSY-PCB,A/V SIDE;-,29A6,29A5,KS3A,PAL,-

C701	2202-000121	C-CERAMIC,MLC-AXIAL;100pF,10%,50V,Y5P,TP	
C702	2202-000121	C-CERAMIC,MLC-AXIAL;100pF,10%,50V,Y5P,TP	
C703	2202-000231	C-CERAMIC,MLC-AXIAL;330pF,10%,50V,Y5P,TP	
C704	2202-000231	C-CERAMIC,MLC-AXIAL;330pF,10%,50V,Y5P,TP	
C705	2401-002009	C-AL:100uF,20%,16V,GP,TP,6.3x7.5	
C706	2401-002009	C-AL:100uF,20%,16V,GP,TP,6.3x7.5	
C707	2202-000231	C-CERAMIC,MLC-AXIAL;330pF,10%,50V,Y5P,TP	
C708	2202-000231	C-CERAMIC,MLC-AXIAL;330pF,10%,50V,Y5P,TP	
CN701	AA39-20068G	LEAD CONNECTOR-ASSY;-,YBNH025-08,67096-0	
CN702	AA39-20070J	LEAD CONNECTOR-ASSY;-,7P,;,YBNH2	
CN703	AA39-20069A	LEAD CONNECTOR-ASSY;-,YBNH025-05,67096-0	
CN704	AA39-00070A	LEAD CONNECTOR-ASSY;-,;,YB	
CN705	AA39-20009E	LEAD CONNECTOR-ASSY;-,YFH800-01,;,1P,600	
JA701	3722-001031	JACK-RCA;3P3.6MM,#18,AU	
JH701	3722-000143	JACK-PHONE;1P(VER),3.4mm,AG,BLK,NO	
JS701	3722-001163	JACK-VHS;4P,12mm,AU,BLK,N	
L701	2701-000114	INDUCTOR-AXIAL;10uH,10%,2.5x3.4mm	
L702	2701-000114	INDUCTOR-AXIAL;10uH,10%,2.5x3.4mm	
L703	2701-000114	INDUCTOR-AXIAL;10uH,10%,2.5x3.4mm	
L704	2701-000114	INDUCTOR-AXIAL;10uH,10%,2.5x3.4mm	
L705	2701-000168	INDUCTOR-AXIAL;3.3uH,5%,2.5x3.4mm	
L706	2701-000168	INDUCTOR-AXIAL;3.3uH,5%,2.5x3.4mm	
L707	3301-000287	CORE-FERRITE BEAD;AA,3.5x1.0x6.0mm,1500,	
L708	3301-000287	CORE-FERRITE BEAD;AA,3.5x1.0x6.0mm,1500,	
PCB	AA41-00155APCB-SIDE	AV:KS3A,1L,FR-1,245x245x1.6T,8A	
R701	2001-000028	R-CARBON(S);100OHM,5%,1/2W,AA,TP,2.4X6.4	
R702	2001-000028	R-CARBON(S);100OHM,5%,1/2W,AA,TP,2.4X6.4	
R703	2001-000969	R-CARBON;750OHM,5%,1/8W,AA,TP,1.8X3.2MM	
R704	2001-000969	R-CARBON;750OHM,5%,1/8W,AA,TP,1.8X3.2MM	

ASSY-POWER,CORD

* AA96-20130CASSY-POWER,CORD;-,CP2/NO(4.0R),H/C300MM,

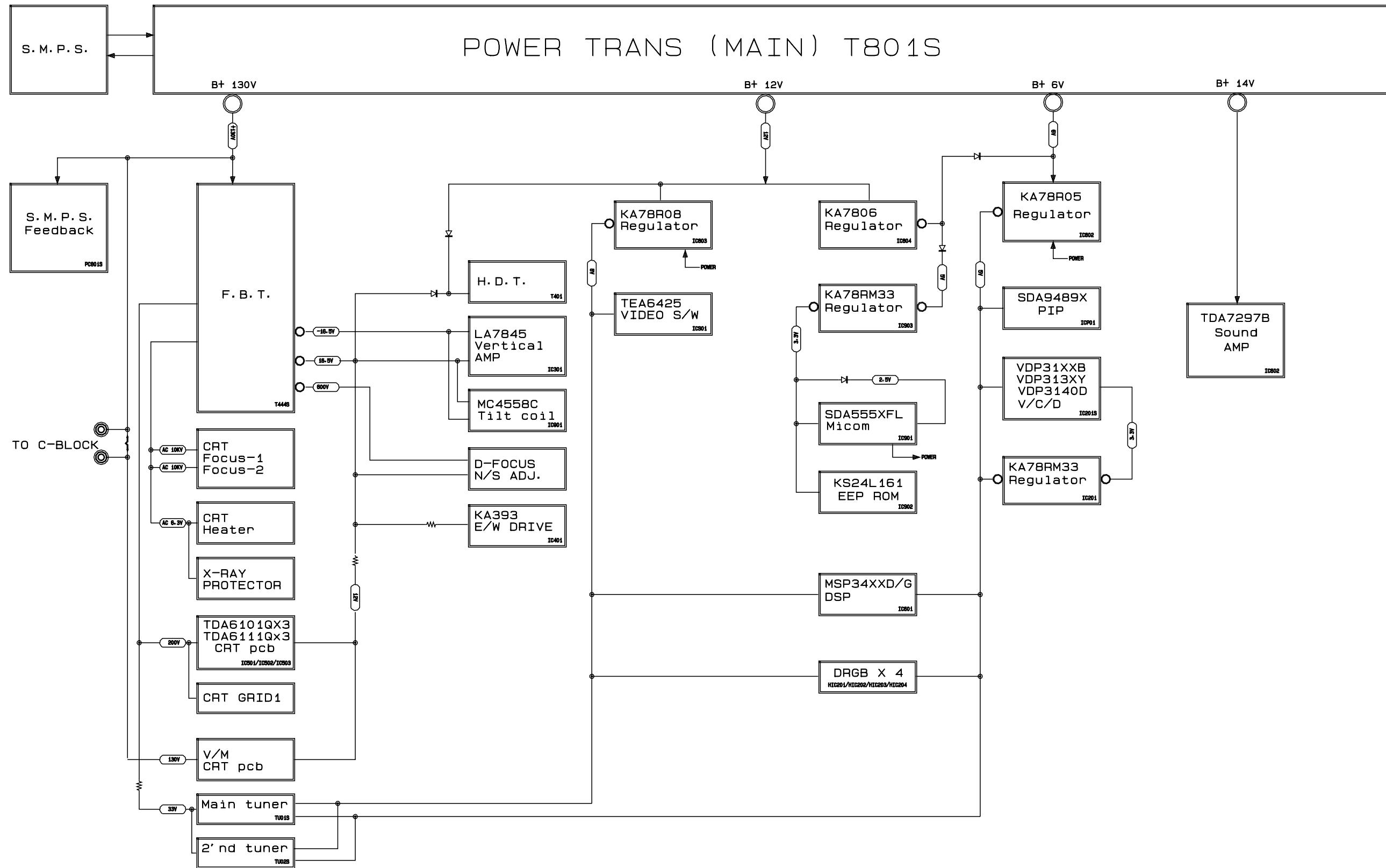
AA61-20284AHOLDER;-,P-CORD,PP,VO,BLK,KE-002
AA39-10003BPOWER-CORD;-,KJP-140,KLCE-2F,2.4m,HOUS,S

REMOCON

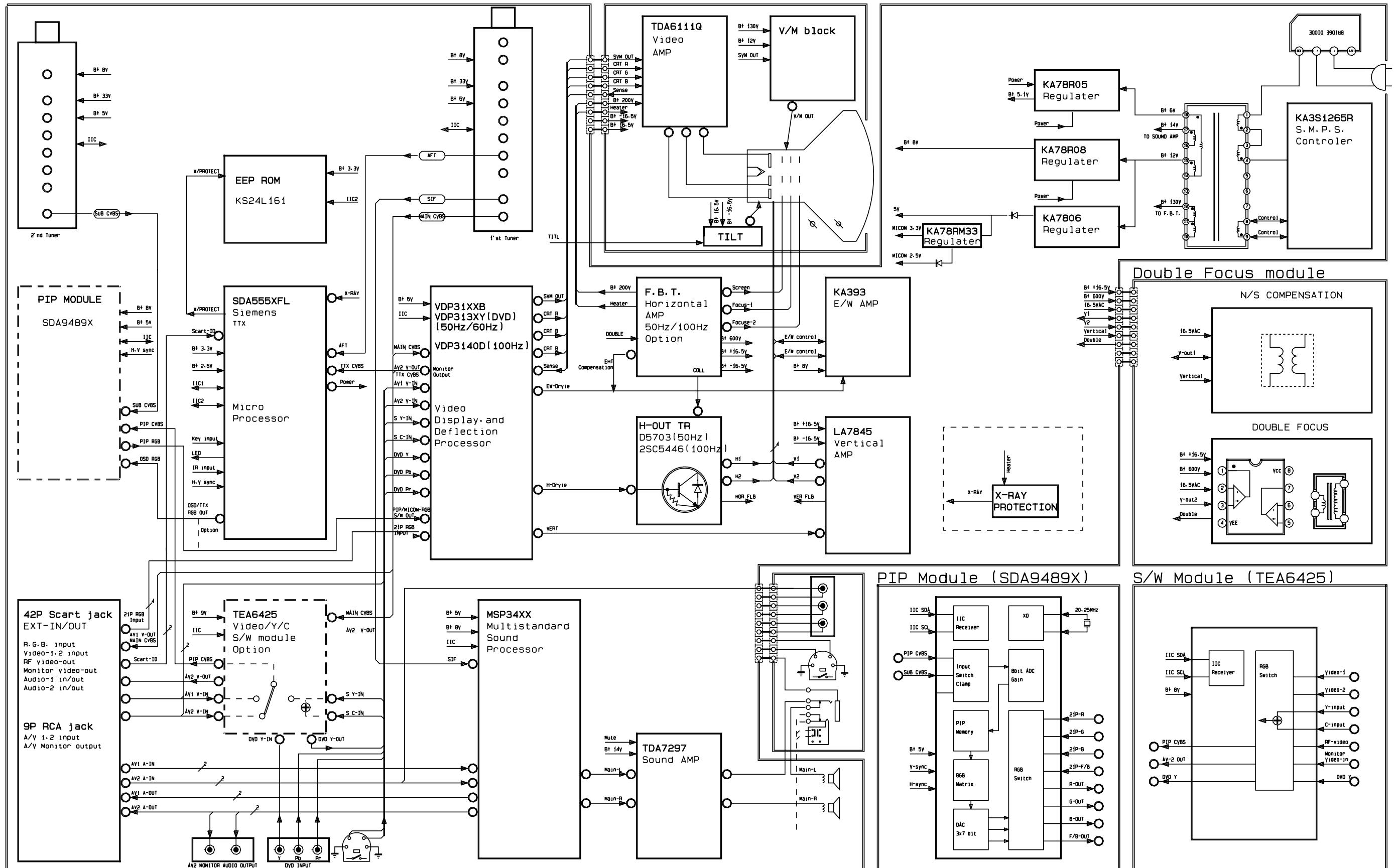
* AA59-00104AREMOCON;-,TM59,DREAM,29,L/GRAY,-,EX,PA

8. Block Diagrams

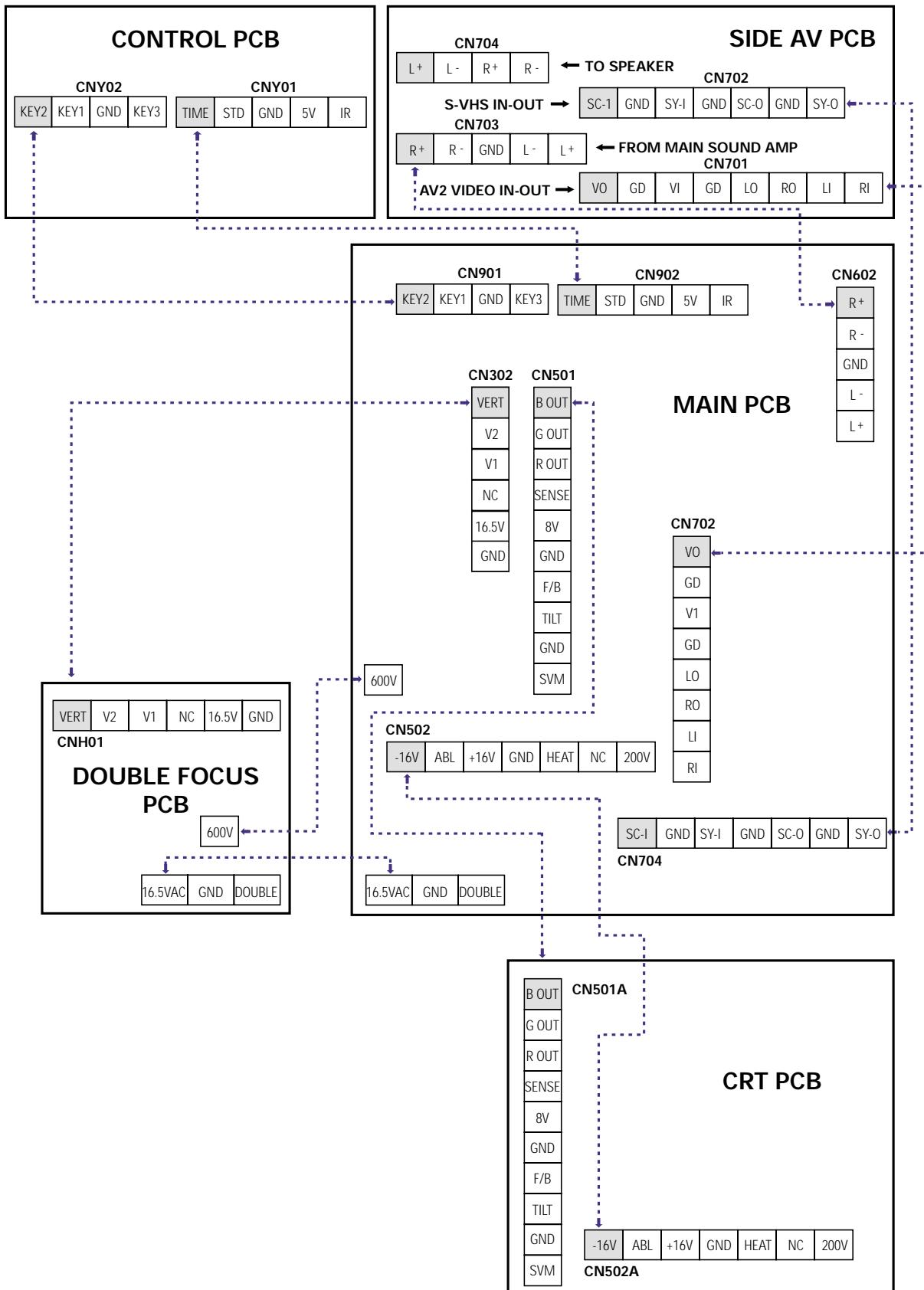
8-1 Power Diagram



8-2 Block Diagram



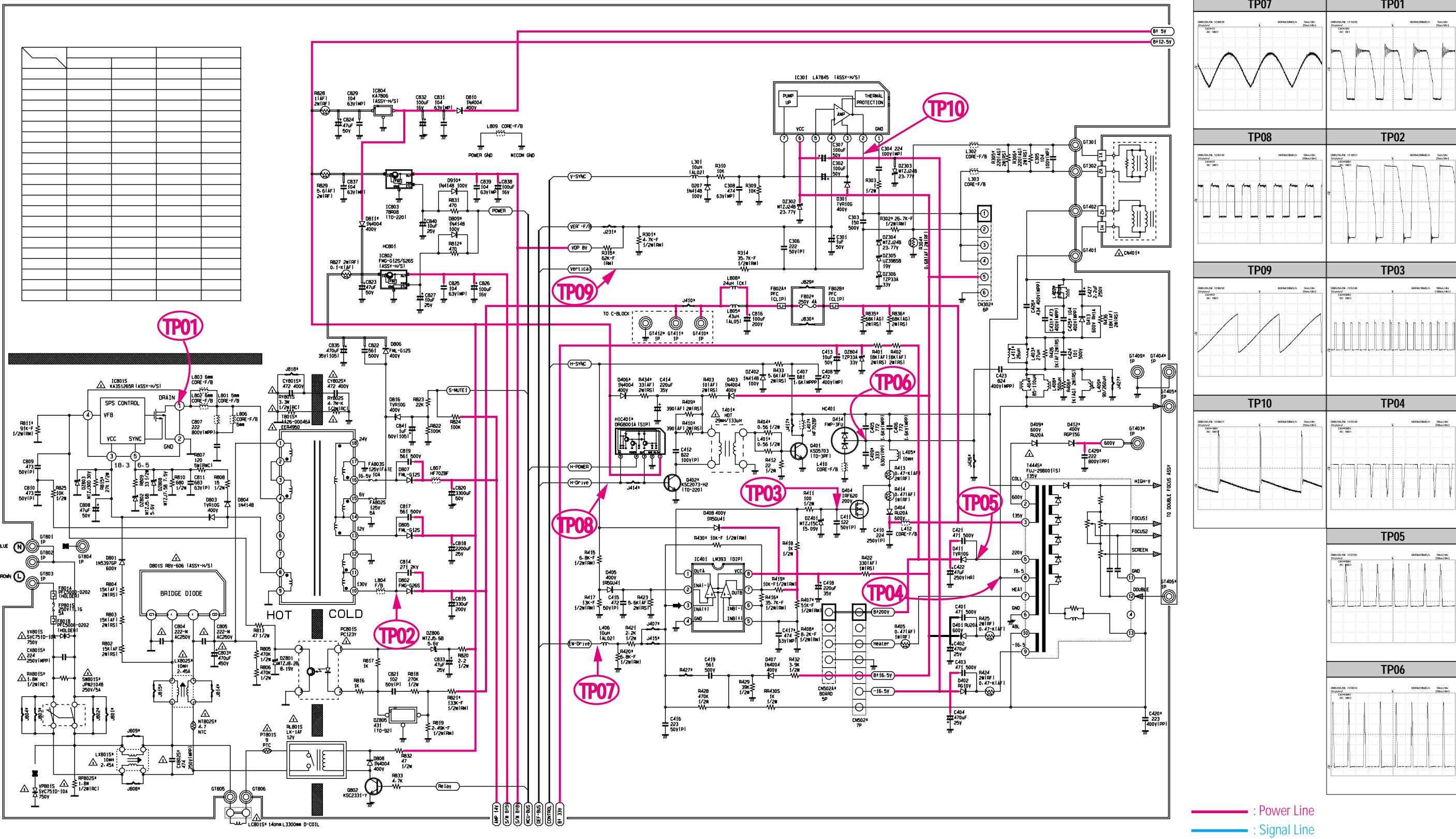
9. Wiring Diagram



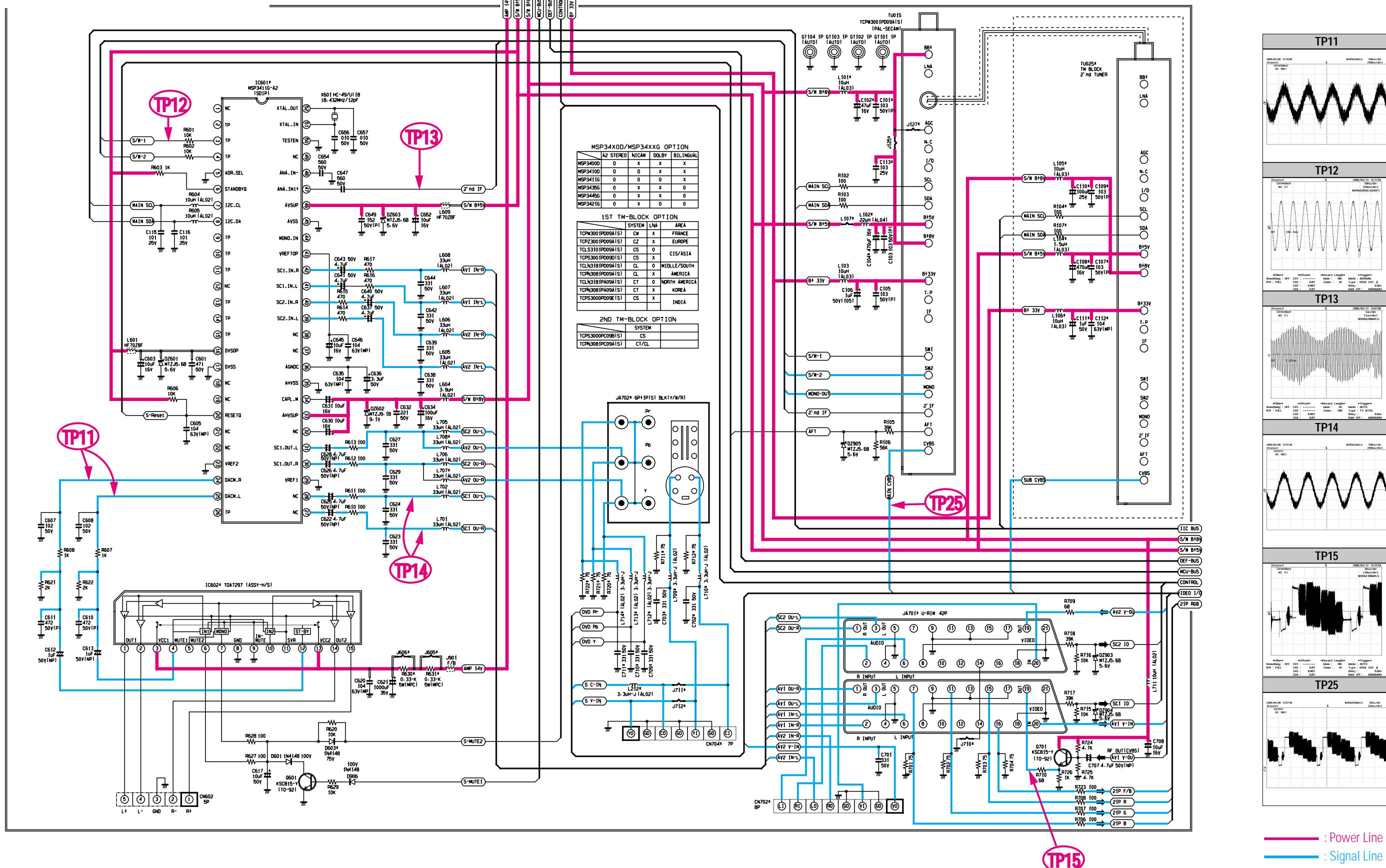
MEMO

10. Schematic Diagrams

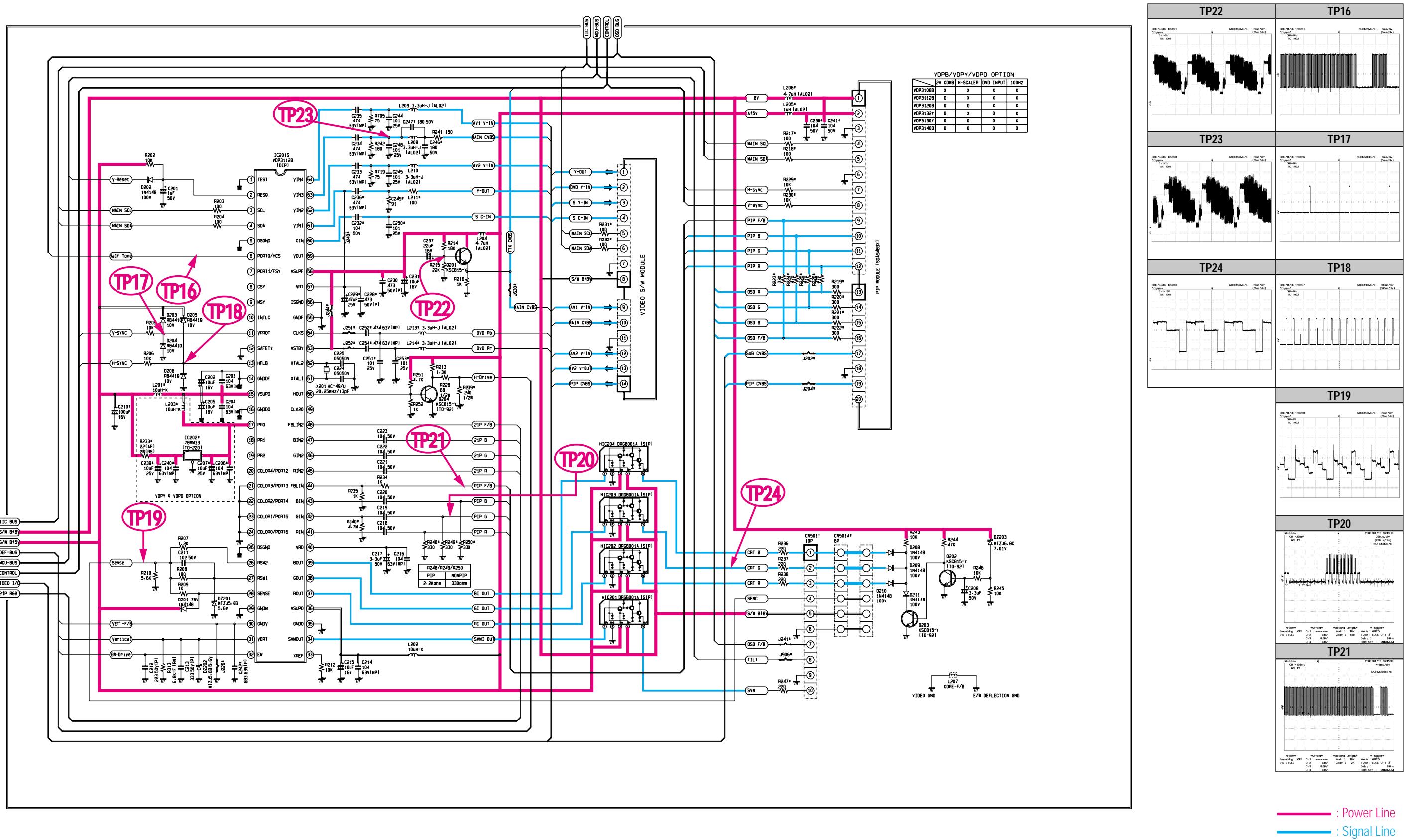
10-1 MAIN 1



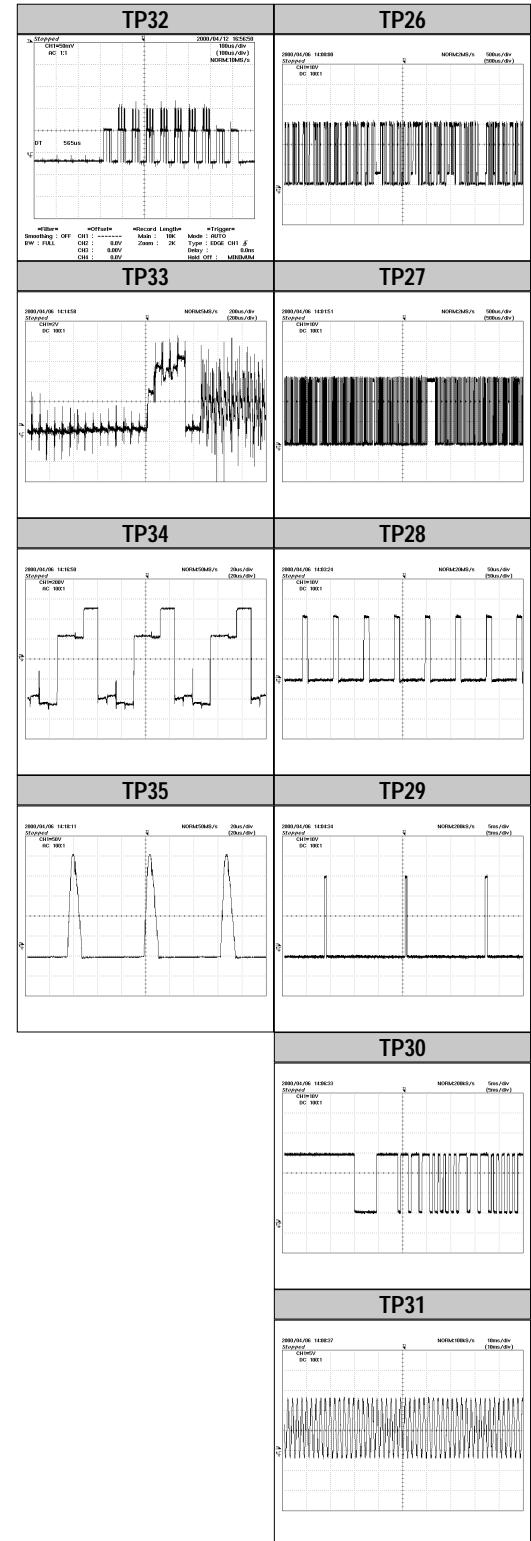
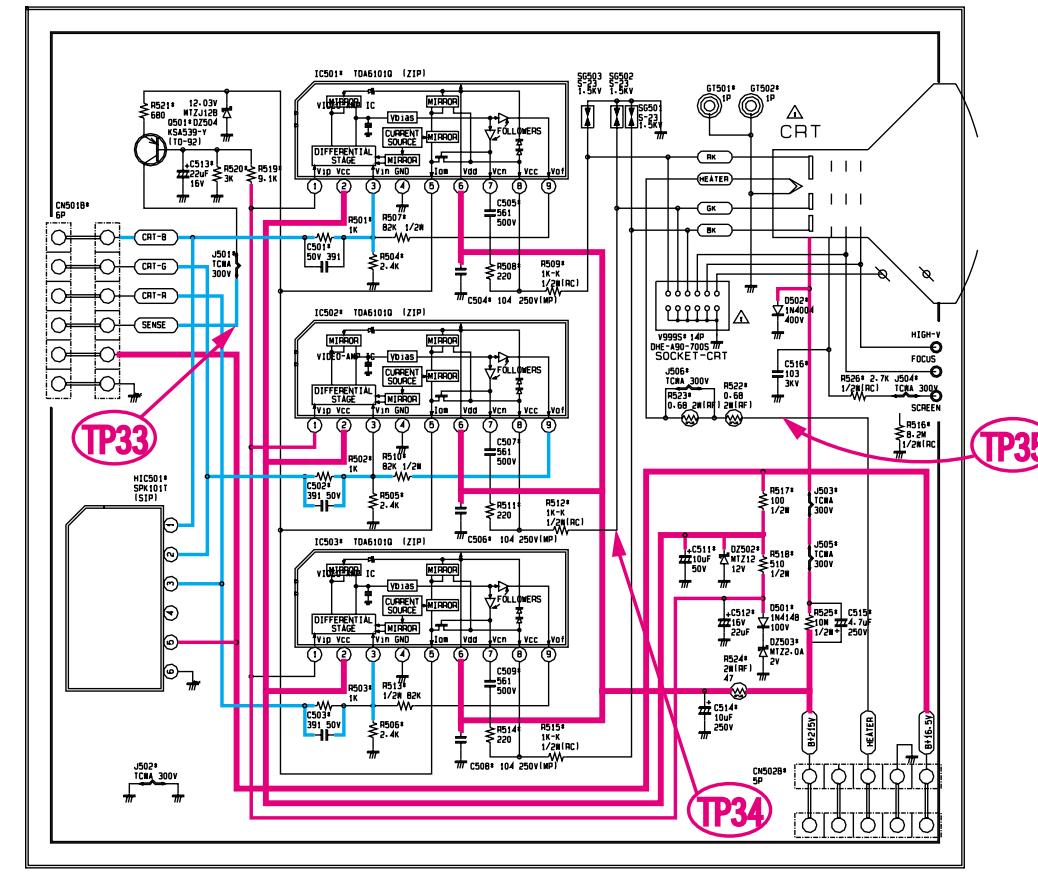
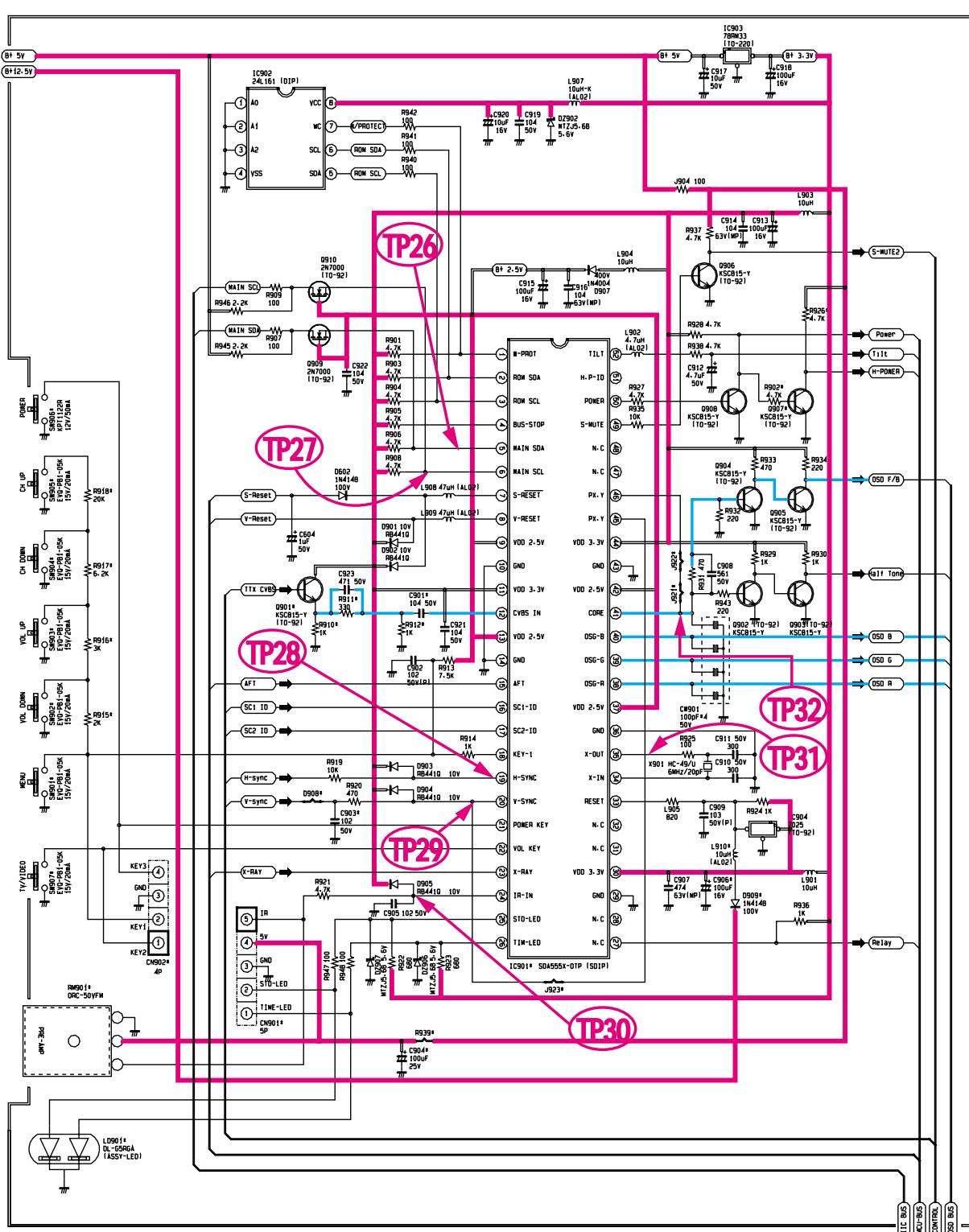
10-2 MAIN 2



10-3 MAINS



10-4 MAIN 4



KS3A MAIN SCHEMATIC DIAGRAM

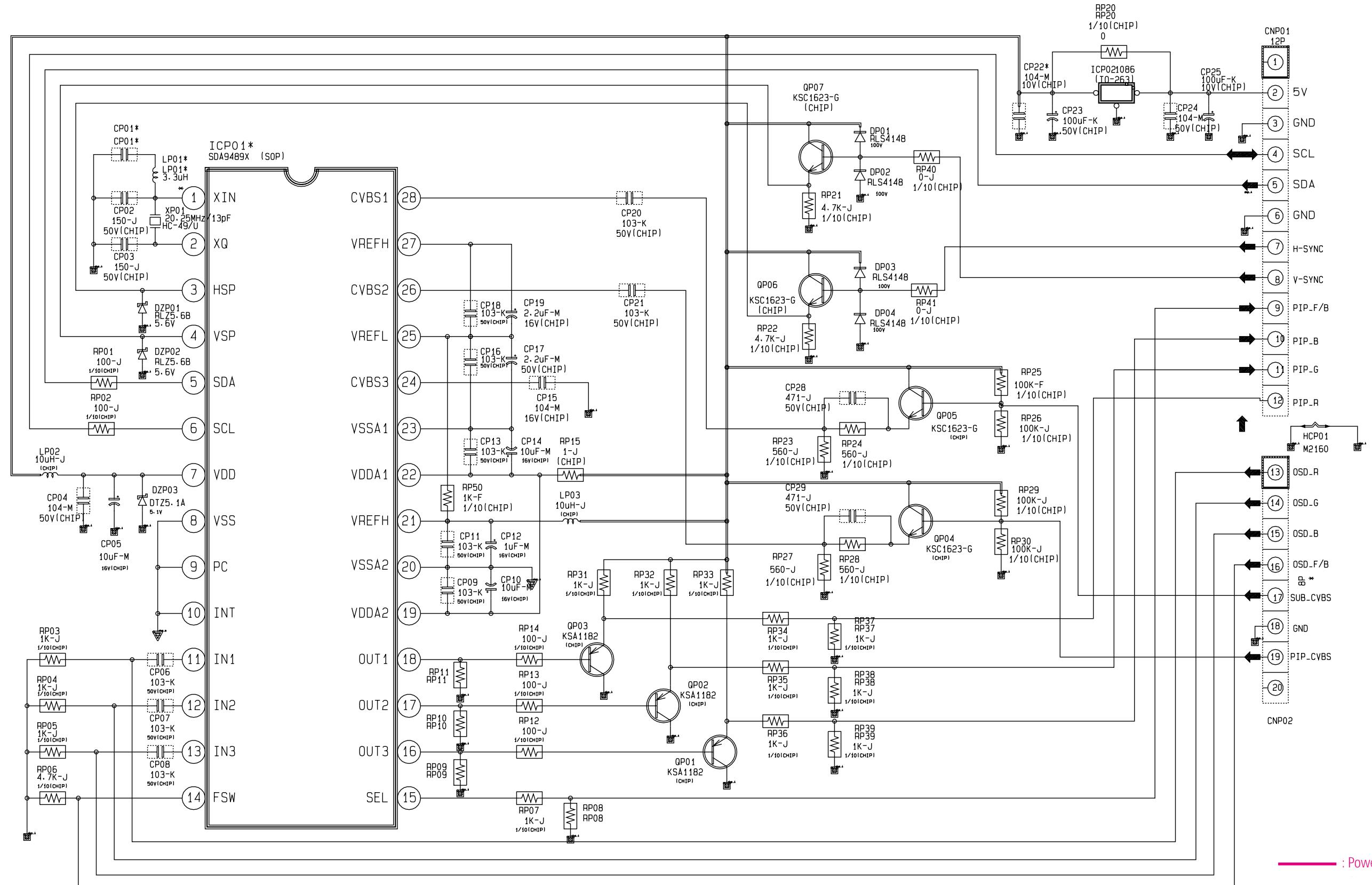
C A P A C I T O R	
Ceramic - SL	No Mark
Ceramic - CH	(CH)
Polyester (Induct)	(P)
Polyester (Noninduct)	(PN)
Polypropylene	(PP)
M. P. Polypropylene	(MP)
Tantalum	(T)
Non Polar	(NP)

R E S I S T O R	
Carbon	No Mark
Composition	(C)
Metal Oxide	(MO)
Metal Film	(MF)
Fusible	(F)
Cement-Wire	(CW)
Network	(N)

JOB-NO	TEAM	NODE	DESIGN	OPE	EDIT
Dream	KS3A	NC7	Y-K KIM		2000/06/22

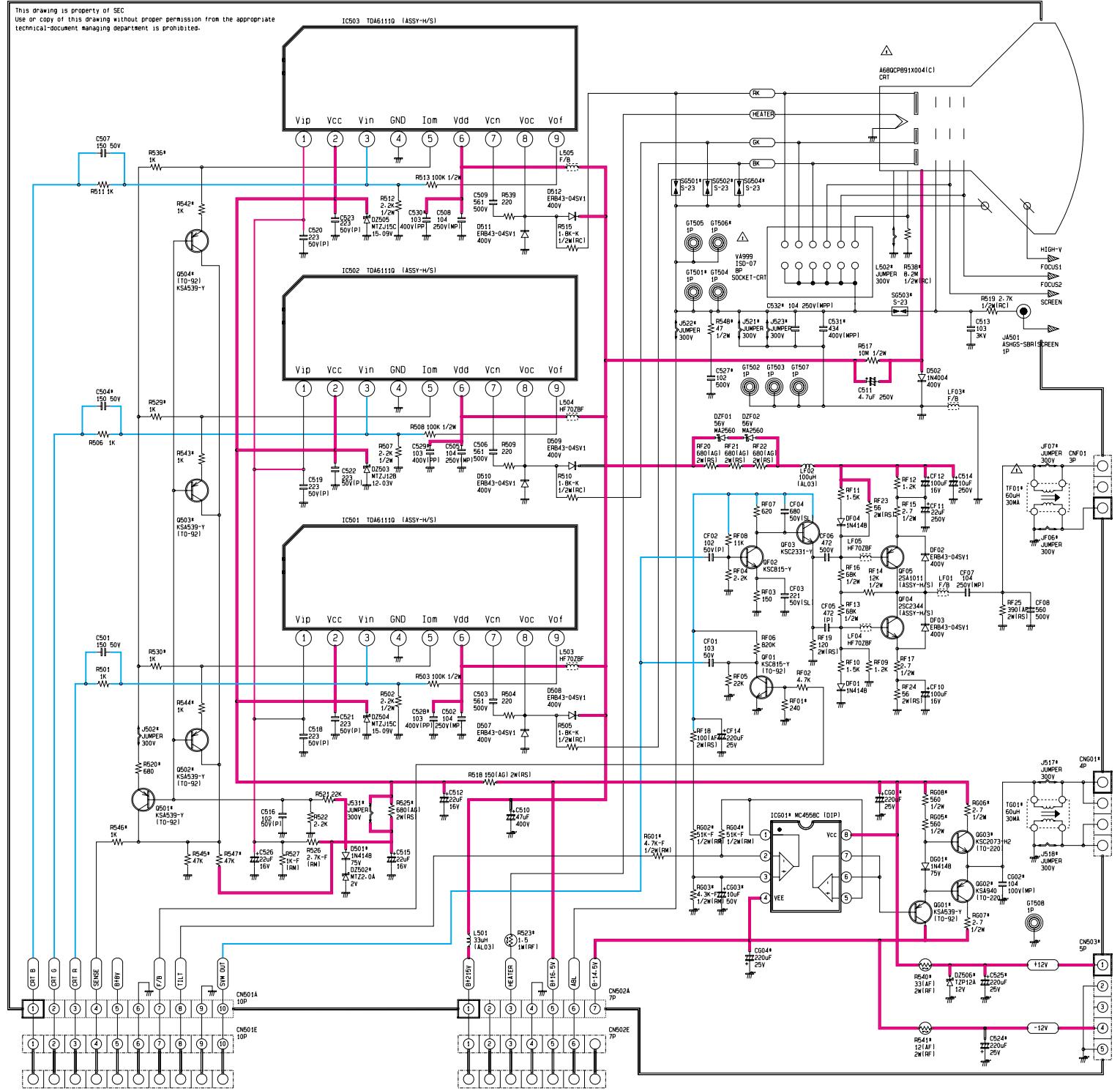
: Power Line
: Signal Line

10-5 PIP

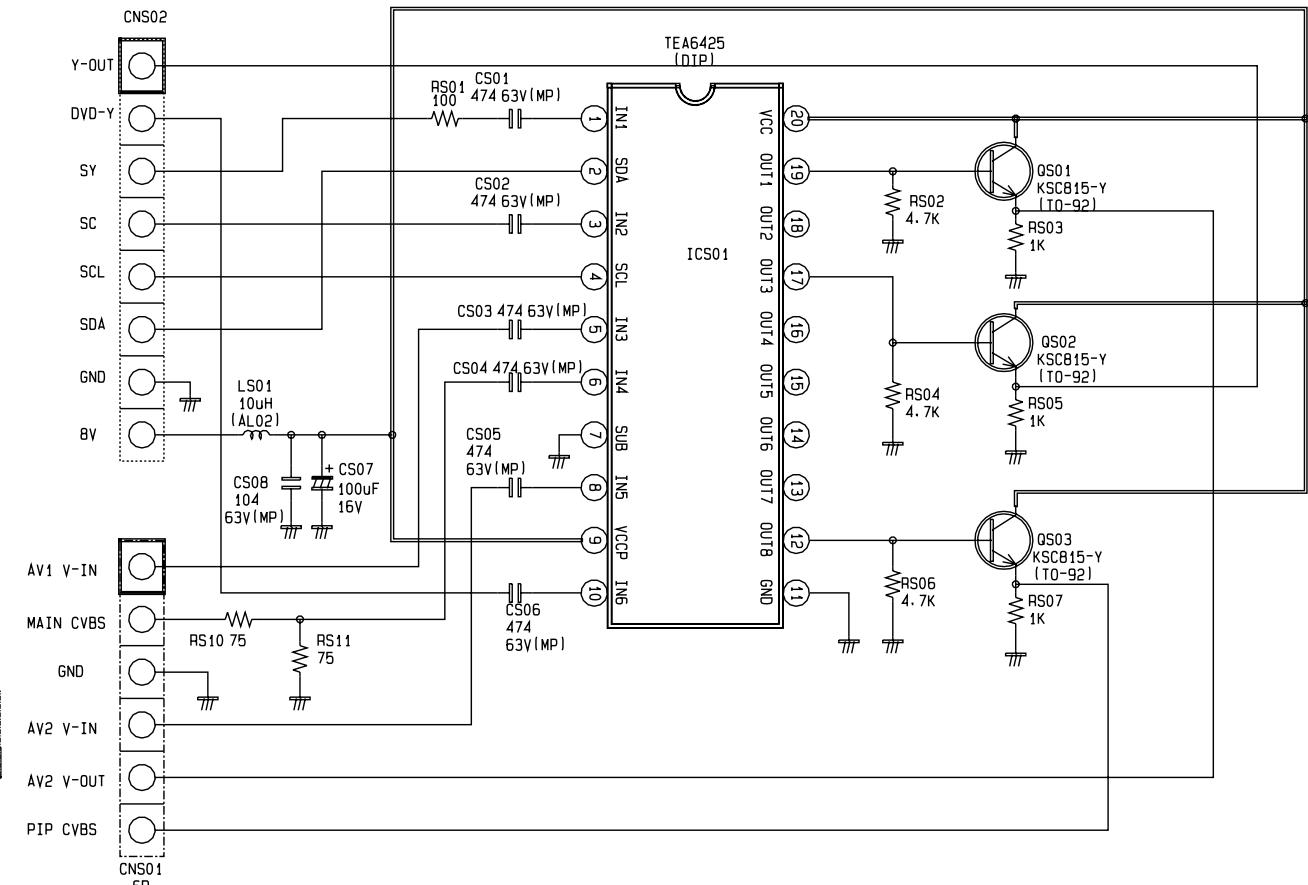


10-6 CRT, SWITCH

CRT



SWITCH



— : Power Line
— : Signal Line



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